

# Transit 2001 Technical Report

Submitted by the Transit 2001 Commission  
to Governor James B. Hunt Jr., February 1997

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# Transit 2001 Executive Summary

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to Governor James B. Hunt Jr.,  
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## **Foreword**

The Transit 2001 Commission was appointed by Governor James B. Hunt Jr. in September 1995 to provide recommendations for improving public transportation in the state for the 21st century. Recognizing the need to enlarge the role of public transportation as the state continues to grow, the commission has worked to ensure basic mobility for all citizens, provide auto- competitive rail passenger services and define the proper role of state government in funding transit services. The commission has 26 members,

including government, business and community leaders from across the state. A technical committee, consisting of 29 transit industry professionals, NCDOT and a consultant team supported the work of the commission. Through a number of public forums and the work of four subcommittees, the commission examined key issues -- rural and human service transportation, urban and regional transit, intercity rail passenger service, land use and development.

The complete work of the commission is contained in a technical report. This executive summary provides highlights of the commission's findings and recommendations. It summarizes the challenges in helping to maintain North Carolina's quality of life, provides an action agenda to expand and enhance the state's public transportation in the near term and recommends funding mechanisms to make it a reality.

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"When I recruit business to our state, I want to be able to say 'Come to North Carolina, you won't get stuck in traffic congestion.' We need regional rail and high-speed rail transportation to keep North Carolina moving."

Jim Hunt, Governor of North Carolina

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## **Message from the commission Chairman**

The Transit 2001 Commission submits this report to Governor Hunt, the General

Assembly and to the people of North Carolina with a sense of urgency. This urgency is born of the conviction that we must address transit issues now before this window of opportunity closes. The failure to do so will have dire consequences for the future of this great state.

We do not need to guess what those consequences will be. We need only to visit those urban areas in the country which developed without viable transportation systems other than the private automobile. In a poignant moment during our deliberations, one of our transit managers quoted a consultant as predicting that North Carolina might well become "Los Angeles with seasons."

North Carolina needs a first-class system of roads and highways. We have one of the nation's best. But with a population expected to grow rapidly, vehicle miles traveled on those roads will likely double early in the new century. We cannot expand the road system rapidly enough to meet this demand. Some of our most heavily traveled corridors are built-out, and we are already being given examples of the congestion which awaits us. Once this nightmare arrives, few solutions will be available. The time to act is now.

Transportation alternatives are essential to our future. The issue is not highways or transit. We must have a transportation system which embraces various modes and alternatives if we are to move goods and people safely and conveniently.

Transportation must be available for those who cannot operate cars. Our rural counties especially have growing elderly populations who can enjoy independent living if they can be transported to essential life services. The disabled and others who cannot afford one or more cars must be able to get to jobs, churches and stores.

Governor Hunt has challenged us to make North Carolina the South's leader in the enhancement of passenger rail. Make no mistake: passenger rail is coming in the next century. The benefits to the state of such leadership, economic or otherwise, are potentially enormous. Indeed, Governor Hunt's vision for rail service in our state may someday be regarded as among his greatest contributions.

The increased state investment in transit this report requires is modest compared to the total transportation effort and compared to other states. These investments will pay and repay their cost in economic development, jobs and livable communities.

I would like to thank my fellow commissioners for their dedicated efforts. I also thank, for the commission, Transportation Secretary Garland Garrett and the Board of Transportation for their support. Deputy Secretary David King and his staff bring honor to the profession of government service. The trustees and staff of Wake Forest University gladly made it possible for me to undertake this assignment.

This report is yet another example of

Governor Hunt's capacity to envision a better future for North Carolina and point us in new directions. He has been a constant source of support and counsel. I am grateful for his confidence and friendship.

It has been my honor to serve with these distinguished and loyal North Carolinians in bringing these urgent issues to public consideration and determination. The Transit 2001 Commission invites your interest and involvement. If we act now, in the new century we can have robust growth and expansion, but we can also keep "North Carolina home."

Thomas K. Hearn Jr.  
Chairman, Transit 2001 Commission  
January 1997

## Transit 2001 Technical Report

# Preface

### **Transit means good business**

North Carolina has the opportunity to reinforce its position as the economic bellwether of the southeastern United States. Rapid growth and economic development are expected to continue across the state well into the 21st Century. As a result, we can contemplate many wonderful opportunities for our citizens. As desirable as the prospect may be for current and future residents, however, growth and development bring substantial risks:

- We need to act now to provide more transportation options or traffic congestion and delay will stifle the economy.
- We need to act now to provide easy access to essential services such as health, education and jobs or the cost of these services will grow beyond our control, and an increasing number of North Carolinians will be isolated from progress and opportunity.
- We need to act now to promote and encourage wiser patterns of development and greater choice in living arrangements or we will

degrade our natural environment and increase public service and infrastructure expenditures beyond our ability to pay.

In short, unless we change our ways, we are on a course to become another Los Angeles or Houston!

### **The new vision for public transportation in North Carolina**

There is another vision of North Carolina's future. It begins with the commitment to introduce a new generation of public transportation systems, services and technologies that will better serve the burgeoning travel demands of a growing economy. It includes a commitment to provide increased access to job opportunities, education and medical facilities, and travel choices for a generation of workers. And it serves as a catalyst for new patterns of development that can preserve the character of our communities and the North Carolina style of living.

Governor Hunt's Transit 2001 Commission has concluded that it is time for our state to take a leadership role in turning this vision into a reality by:

- Expanding the types of transit services we have available in both rural and urban settings to include door-to-door van services, community transportation systems, regional rail, high-occupancy vehicle facilities,



transitways, people-mover systems, and high-speed, intercity rail passenger service.

- Introducing the latest technologies in transportation to increase comfort and convenience and to reduce costs, including space-age telecommunications and information systems, environmentally sensitive alternative fuels and new vehicle designs and materials.
- Engaging private business and industry in new partnerships that can extend the reach of new services, put them in place quickly and reduce their overall costs.

Moving this agenda forward requires broad support and commitment to several key principles outlined by the Commission. First, we must invest more money in public transportation. Second, decisions about the scope and character of future transportation investments must be made in concert with state and local goals and plans. Third, funding from federal, state and local sources must be made predictable and reliable through the establishment of fixed ratios for various types of transit and related investments. Fourth, we must link transportation investment and land use decisions on a regional scale to match the broadening scope and nature of today's travel and development activity.

**Shifting away from "business as usual"**

Acting on these principles will help ensure North Carolinians of a vibrant economy and an increasing quality of life. But it will be necessary for us to shift away from the "business-as-usual" approach to transportation investment in several key areas.

- First, the transportation investment priorities of the state must be reconsidered. The current commitment of one percent of the state's transportation budget is not enough to reverse our course toward "Houstonization" and Los Angeles-style gridlock in future years. **The Transit 2001 Commission recommends that state funding for transit be increased immediately from \$20 million annually to nearly \$95 million, representing a commitment of 5 percent of the state's transportation budget.**
- Second, we must abandon the notion that our transportation future requires an "all-or-nothing" commitment to highways or any other single mode of travel. **The Transit 2001 Commission recommends that we invest in creating a seamless, multimodal network of systems and services that link all forms of public transportation, fully integrated with the highway network.**
- Third, we must provide incentives to guide future local and regional decision making, including expansion

of local authority to raise and invest local funds in public transportation and related improvements. **The Transit 2001 Commission recommends that the state expand local authority to raise revenues to make the recommended transit investments.**

Expanding the role and relevance of public transportation is a critical step for North Carolina to take now. It is a step that is being taken by U.S. economic competitors abroad, as well as by competing states and metropolitan regions across the country. Further, strong endorsement of public transportation options is a step that is being taken more and more by local officials and community leaders across North Carolina. To delay will only mean that important opportunities will be lost and options will be foreclosed in the years ahead.

Aggressive investment in North Carolina's transit future and a new commitment to innovation in transit services, technology, operations and management will place the state in the forefront of those who will grow and prosper in the 21st Century.

Transit 2001 Technical Report  
Chapter One

# 21st Century Transit for North Carolina

- **Traffic growth is far outpacing population growth and our ability to build roads.**
- **Sprawling development is consuming valuable natural resources and adding further to declining mobility.**
- **"Business as usual" in transportation planning and investment cannot meet the needs of the 21st century. We must place greater emphasis on providing travel options and encourage wiser patterns of development.**

North Carolina is one of the fastest-growing states in America. New residents and businesses are drawn by our spectacular and varied landscape, comfortable climate and distinctive, North Carolina style of living, and they continue to settle and prosper here. Our population increased by 20 percent between 1980 and 1996 to include more than 7 million people. During this time our economy

more than doubled. Gross state product increased from \$59 billion in 1980 to \$141 billion in 1990, and solid growth in employment and per-capita income enabled more North Carolinians to enjoy a higher quality of life.

Looking ahead to the 21st century, we can expect these positive growth trends to continue. In fact, our state will grow tremendously in the years ahead. The federal Census Bureau predicts our population will increase to more than 8.3 million residents by 2010.

Our state's economic future is bright, and good planning and investment strategies will help solidify its competitive edge in the global economy. Our prosperity and high quality of life, however, depend on much more than future growth. Economic development brings increasing demands for public services and infrastructure. We must match economic progress with increased attention to innovations that wisely accommodate growth and expansion. We must seek to channel growth and development without sacrificing qualities that make North Carolina an attractive place to live, work and visit.

Economic growth brings increased demand for public services and facilities. The availability of efficient and economical transportation is one of the most critical challenges North Carolina faces to meet this demand. Renewed attention to transportation, particularly the role of public transportation, is critical to

sustaining economic growth, preserving our way of life and protecting the character of our communities.

## 1.1 Public transportation is important

As in most states, personal vehicles dominate transportation in North Carolina. Our extensive highway system, widely regarded as one of the nation's finest, serves every corner of the state.

Investments we have made in streets and highways have helped give us unparalleled mobility and have helped fuel unprecedented growth and prosperity. But the character of our communities, our style of living -- our continued prosperity -- could be in jeopardy:

- Traffic in our metropolitan areas frequently slows to a crawl as too many vehicles pour onto our streets and highways -- roads that have reached their capacity far more quickly than we originally planned and that have severely limited prospects for further expansion.
- For many North Carolinians, viable transportation options simply do not exist. Our residential suburbs sprawl further from urban centers in patterns that undermine prospects for traditional public transit and discourage walking and bicycling, even for short trips. In many communities, personal vehicles are

the only option for transportation.

- In 1978, during his first term as Governor, Jim Hunt thrust North Carolina into a position of national leadership by signing an executive order which mandated the coordination of human service transportation. Despite this pre-eminence, many elderly, young, low-income or disabled citizens, who may not be able to use private vehicles to meet fundamental transportation needs, have very limited options for mobility. They also face isolation, hardship and increased monetary costs for commercial transportation services -- costs they sometimes are unable to pay -- which add to public expenses for delivery of healthcare, human services, education and other needs.

To some degree today, most of us in North Carolina encounter these conditions as a part of our daily routines. The mobility that we take for granted -- the ability to travel through our communities with ease and safety -- is being compromised by growth, rapidly in some areas, more slowly in others. The accessibility on which we depend -- the ability to get to and from essential destinations and services -- is being reduced by a lack of transportation choices and the continuing spread of development.

If declining mobility and reduced accessibility emerge as dominant features of life in North Carolina, the very qualities

that make our state an attractive place to live and do business will no longer be available. It will be very difficult, if not impossible, to sustain the economic growth and prosperity we seek and enjoy.

## **Responding to challenges and seizing opportunities**

The task of providing effective transportation choices to accommodate our current and future growth has become increasingly complex. Transit 2001 responds to this challenge by proposing a comprehensive, statewide, action agenda and investment strategy to encourage developmental policies that will enhance mobility and accessibility for all North Carolinians.

Our challenges are based on many of the same circumstances evident in other states: Traditional investments that are focused exclusively on highway expansion do not serve community development goals adequately and cannot fully meet our growing travel demands. Financial constraints, concerns for environmental damage and the reluctance of some communities to endorse major highway construction efforts reinforce this premise. More transportation choices and more-balanced transportation investments must guide future state transportation investment strategies.

The challenge of formulating a statewide, public transportation action agenda would be more daunting were it not for our present opportunities. Phenomenal



growth and development have given North Carolina unparalleled economic expansion. This growth also can provide the catalyst to fuel a new era of multimodal transportation planning and investment. The need for better mobility and innovative, effective public transportation compels us to act -- and act now -- to avoid the fate of other states where sprawling development and traffic congestion have created a poor quality of life and less-desirable business climate.

### **Avoiding 'Houstonization'**

When community discussion turns to characteristics and qualities that North Carolinians most want to avoid in the process of growth and development, we frequently refer to areas like Houston or Los Angeles as places that we prefer not to resemble. Economic vitality and quality of life are threatened seriously in these regions, and mobility and access have become major problems. Traffic consumes streets and highways, and multi-lane freeways and parking lots bisect communities. Older neighborhoods lie neglected while newer developments sprawl further outward without distinctive character or a sense of community. Personal vehicles are an absolute necessity. For these regions, renewed emphasis and investment in public transportation now are critical to the very survival of their communities. They only recently have initiated reasonable transportation alternatives to the

automobile and aggressive new transit programs to halt past trends.

In other regions, like Portland, Ore. and Sacramento, Calif., where communities also are fighting to avoid 'Houstonization,' programs to increase the availability and use of public transit now are fundamental strategies. North Carolina can take advantage of these regions' experiences by embracing a new and exciting array of transit service and development options.

Our burgeoning suburbs, with their tremendous residential, office and retail development, are the most obvious signs of our recent economic growth. The rapid development of residential suburbs past the outer reaches of our urban areas has forced many North Carolinians to depend exclusively on personal vehicles for transportation. Newer developments typically offer fewer choices of neighborhood character, architectural styles and housing arrangements than older, more- traditional neighborhoods. Many suburban homes occupy lots that are one-half acre or larger, and they are not supported sufficiently with neighborhood-based stores and services. Misguided suburban planning forces residents to depend on personal vehicles for virtually every transportation need. This pattern of development consumes large tracts of land, increasing the costs for local governments to provide public services, undermining the availability and effectiveness of public transportation and overdeveloping areas that otherwise could have significant

ecological or agricultural value.

Public transit supports mixed development that is more varied, uses less land and is less costly to serve. The availability of good public transportation is essential to support a greater choice, diversity and efficiency of housing arrangements and public services.

**Travel demand and vehicle ownership continue to grow much faster than our population.**

Increasingly, traffic congestion and delays are spreading to more of North Carolina's streets and highways, and not only during rush hours. Traffic congestion at non-peak times is commonplace in many areas.

Despite aggressive highway construction, our roads have not been able to keep up with incredible traffic growth. The resulting traffic congestion and delays increase travel time for employees, consumers, suppliers and manufacturers, and decrease productivity and profitability. Nationally, traffic delays cost Americans billions of dollars every year. For business and industry, poor transportation inhibits access to workers. For workers, traffic congestion and delays cause stress and other adverse health effects that, in turn, can lead to higher levels of absenteeism, employee turnover and reductions in performance and productivity. ([See Figure 1A](#))

**Good public transportation increases the efficiency and capacity of our highways.**

Effective public transportation is essential to relieve overcrowded highways, especially in major transportation corridors. As North Carolina continues to grow, it is critical that we find ways to make existing highways more efficient and to extend the usefulness of our current highway investments. The most effective way is to increase the efficiency and passenger-carrying capacities of highway corridors. We can achieve this by increasing the availability and use of multiple-occupancy vehicles. Buses, vans, carpools and vanpools are the quickest way to get immediate, positive results. Each of these ridesharing modes can replace a substantial number of single-occupancy vehicles on the roadway. Fixed-guideway transit services, like intercity rail, regional rail, transitways or high-occupancy- vehicle facilities, called HOV facilities, have an even greater potential to protect highway investments and expand highway capacities for the long term.

**North Carolina severely limits its investment in public transportation, which reduces the scope, relevance and use of transit.**

Despite our national leadership in human service transportation and intercity rail passenger programs, we lag far behind other fast- growing, urbanizing states in the extent and intensity of public transportation. North Carolina's transit systems operate existing services

efficiently but limit their effectiveness by failing to make them attractive or convenient options for most citizens. National experience proves that the most effective way to attract new riders to public transportation is to expand service and enhance reliability. Given North Carolina's unprecedented growth and continuing development, it is crucial to significantly increase the availability and use of public transportation throughout the state. ([See Figure 1B](#))

North Carolina's investment in public transportation ranks among the lowest in the nation. Although we recently have expanded transit programs and achieved great success in coordinating public transportation with county human service needs, North Carolina's investment in public transportation consistently ranks far below the level of other states. From an annual state transportation budget of approximately \$1.7 billion, we devote just over one percent -- slightly more than \$20 million -- to public transportation facilities and services. Our under-investment severely limits the availability, use and relevance of public transportation throughout the state. With the prospect of declining federal assistance for public transit, even the current, inadequate levels of public transportation funding are in real jeopardy. ([See Figure 1C](#))

North Carolina's phenomenal growth and development are critical reasons why we must increase the role and relevance of public transportation, expand its

availability and attract a wider range of users. This will require a fundamental shift in how we plan for and invest in transportation.

## 1.2 Shifting the focus of transportation planning

Nationally, the scope and nature of transportation planning is shifting. While North Carolina has done a better job than many states of planning and programming on a multimodal basis, a great deal more improvement can yet be made. While highways are and will remain critical to North Carolina's future, other states have been more aggressive in embracing new perspectives of analyzing transportation problems, developing multimodal solutions and formulating actions and investments necessary to meet long-term transportation needs. Contrasts between our traditional way of doing business and current perspectives in transportation planning and decision-making are highlighted by [Figure 1D](#).

Impetus for this shift in planning and investment has come simultaneously from federal and local levels. At the federal level, the Intermodal Surface Transportation Efficiency Act of 1991, or ISTEA, requires transportation planners and investors to give balanced consideration to multimodal alternatives

and apply more flexible funding to the options, or combination of options, that are most effective. At local and state levels, community leaders and decision makers are advancing strategies and procedures to provide a broader mix of transportation options, plan development that reduces costs of delivering public services, and preserve quality of life, neighborhood character and the environment. The role and relevance of public transportation has become even more important with this shift in perspective. These dramatic, new commitments expand transportation alternatives to a wider range of citizens and circumstances.

## 1.3 Public transportation for the 21st century

Public transportation in North Carolina currently consists of traditional services operated mostly within municipal boundaries. Our under-investment in public transportation forces community leaders and policy makers to narrowly focus attention on short-term budget issues and cost controls. While these objectives are important, the lack of funding for public transportation severely limits our state's ability to meet the primary goals of public transportation that are more important over the long-term, like:

- Expanded mobility;
- Increased availability of transit services;
- Increased ridership; and
- Greater market share.

There are strategies and actions we must take to make substantial progress on each of these issues.



## **New strategies for rural transportation**

Increased availability and better coordination of transit with human service transportation are the building blocks for improved, rural public transportation. Strategies like flexible cost sharing arrangements, better connections between rural, intercity and urban transportation and the introduction of new communication technologies can reduce the isolation of rural residents, yet maintain the integrity of rural communities.

## **New strategies for urban transit**

Some communities have expanded traditional urban bus systems to reach more citizens, and they are enhancing their services to attract new riders. With or without expansion, urban bus systems can tailor a wide range of route configurations, vehicle types and commuter services to meet the needs of specific travel markets, increase convenience for passengers, reduce operating costs and expand ridership.

## **Regional rail transit for major metropolitan areas**

Regional rail passenger systems attract and accommodate commuter traffic in key transportation corridors where expansion of existing highway facilities is physically or financially infeasible. There are three major types of regional rail passenger systems: light rail transit, called LRT; heavy rail transit; and commuter rail service. In America today, most new regional rail development involves light

rail transit, which resembles technologically updated streetcar service.

- Light rail transit can serve a substantial number of passengers by using single car or multicar, trolley-like trains that operate on existing streets or exclusive rights-of-way. Dallas, Baltimore, Sacramento, Calif., St. Louis and Portland, Ore. recently have introduced new LRT systems and all are experiencing substantial operating success.
- Heavy rail, electrified transit mostly serves established, older metropolitan areas. It uses high capacity, multi-car trains and operates at fast speeds with rapid acceleration over exclusive rights-of-way. Atlanta, Los Angeles and Washington, D.C. have opened heavy rail transit systems in recent years.
- Commuter or regional rail systems generally operate in geographically large metropolitan areas to connect urban centers with outlying suburban and exurban communities that other transit modes cannot serve effectively. The newest commuter rail systems operate in Southern California, the Baltimore- Washington corridor and the Northern Virginia- Washington corridor. Rail transit service proposed by the Research Triangle Regional Public Transit Authority, or TTA, is a type of commuter or regional rail system.

## **High-speed, intercity rail passenger service**

High-speed, intercity rail service generally is designed to travel at speeds from 125 mph to more than 250 mph and serve destinations located 100 to 500 miles apart. In North Carolina, high-speed rail could provide important and effective connections between major metropolitan areas like Charlotte, the Piedmont Triad and Research Triangle.

## **Transitways, busways and high-occupancy- vehicle facilities**

Some regions are introducing a variety of systems and services that improve travel times and reduce delay and congestion by removing traditional buses and other multi-occupancy vehicles from the regular travel stream and by providing preferential treatment on the street and highway network. The most extensive of these new systems, operating in Houston, Ottawa and Pittsburgh, include grade-separated intersections and exclusive rights- of- way for high- occupancy and transit vehicles. Many states have introduced other types of transitways, busways and high- occupancy- vehicle facilities.

## **Expanding the definition of transit: managing mobility**

Large and small communities throughout the nation are introducing a wide variety of services and options aimed at influencing transportation mode choices.

Transportation- demand management

(TDM) strategies can help reduce the number of vehicles using highways and can decrease traffic congestion by increasing passenger carrying capacities for transportation corridors during peak commuting times. Employer- based transportation programs, like flexed or staggered working hours, parking strategies or telecommuting, also can help. TDM strategies are becoming more important for transportation planning processes. Some communities aggressively support TDM as part of their expanding concepts of transit to address local and regional mobility needs.

### **Pricing, fare and marketing strategies**

New pricing, fare structures and marketing strategies, including prepaid fare options, discount pass programs, business sponsored consumer incentives and tailored pricing for specific markets, can provide riders with better options, reduced costs and more responsive service.

### **New partnerships and governance for transit**

Many states have created new partnerships to increase investment in public transportation, enhance reliability and expand service to a greater variety of markets. Partnerships designed to reduce public expenses and eliminate duplicative services can involve government agencies for transportation, health, education and human services. Contract service

arrangements, joint development and joint venture projects also can increase investment from private businesses and industries. These strategies offer new opportunities to effectively share costs, expand transportation services, provide economic development and increase transportation efficiency. Innovative partnerships and governance mechanisms can increase the flexibility and affordability of public transportation development and operation.

### **New technologies to serve travelers and transportation providers**

New transportation technologies enhance the reliability and convenience of service for passengers and provide significant cost savings for transportation providers. New construction materials reduce vehicle weight and save fuel. Efficient fuels and propulsion systems save energy and reduce vehicle emissions. Innovative communication technologies like automatic vehicle location devices, electronic voice annunciators and computer-aided dispatching provide opportunities to reach new riders, increase security, coordinate more efficient scheduling and provide cost savings in operations and maintenance.

North Carolina has begun to investigate new transportation technologies, but there are many more innovations that we should explore to help meet our diverse mobility needs. We have a great opportunity to learn from the progress of other states and make strategic investments that take advantage of their experiences.

## 1.4 Back to the future

Although many of the facilities, systems and services highlighted here might be considered new and advanced, renewing our commitment to public transportation for the 21st century actually revisits and reintroduces many of the best elements of our communities from earlier times.

Restoring our commitment to expand the availability and use of public transportation can allow North Carolina to once again enjoy vibrant town centers and traditional neighborhoods; corner shops and services that are accessible without needing an automobile; roads that connect neighborhoods, not bisect them, streets that do not intimidate pedestrians; travel options that meet the needs of virtually all residents and serve all major destinations; better residential options in neighborhoods with distinct quality and character; and a greater sense of place for all North Carolinians.

There are many exciting public transportation strategies and technologies for North Carolinians to choose from as we shape our future. As a part of our transportation investment strategy, renewed

emphasis on public transit serves many purposes and supports a broad range of goals that are shared by residents, community leaders, businesses and industries.

**If we cannot act to enhance the role and relevance of public transportation in the future, our bright economic future will be dimmed and our North Carolina style of living will be threatened.**

Transit 2001 Technical Report  
Chapter Two

# Where We Are Today

- **The Transit 2001 Commission's focus on public transportation in North Carolina includes rural general public and human service transportation, urban and regional bus transit and proposed regional rail systems, vanpool and carpool services, and intercity bus and rail passenger services.**
- **Overall, transit services in our state are well- run although services are relatively limited when compared to other states and communities.**
- **Still, transit in North Carolina is big business: systems carry about 40 million riders in almost 2,000 vehicles of various kinds each year.**

## 2.1 Growth, development and traffic

Our state's residential and economic growth has brought substantial increases in the population of elderly residents, automobile registration, per-capita income



and the number of households without access to personal vehicles. These trends have enormous implications for current and future transportation policies. Some tend to support the need for expanded highways while others underscore the need for expanded public transportation. We face major challenges to adequately serve the transportation requirements of urban areas and their rapidly growing, lower density suburbs. This challenge has great implications for the nature and extent of public transit in our metropolitan areas. We must find the most effective balance among highways, bus and rail transit, and intercity rail service to preserve and enhance our quality of life.

North Carolina's economy and population is growing at a rate that is nearly 30 percent faster than the rest of the nation, and the U.S. Census Bureau predicts this high rate of growth will continue for at least the next three decades. New residents in North Carolina share two important characteristics: most of them work in highly technical and professional jobs, and they settle predominantly in our state's urbanized areas and surrounding suburbs. By federal definition, North Carolina has 17 metropolitan urban areas: Asheville, Charlotte, Durham/Chapel Hill, Fayetteville, Gastonia, Goldsboro, Greensboro, Greenville, Hickory, High Point, Jacksonville, Kannapolis/Concord, Raleigh, Rocky Mount, Wilmington and Winston-Salem. For the federal government to classify an area as urban, it

must have an urban population of at least 50,000, and urban residents must represent at least 50 percent of the area's total population.

There is great diversity among North Carolinians that impact our transportation needs. ([See Figure 2A](#)) For example:

- A large proportion of us, and an even larger proportion of our jobs, are concentrated in urban counties. These concentrations of people and jobs greatly impact commuting patterns and intensifies travel demands. Residents of urban counties typically own more personal vehicles and have higher per-capita incomes than their rural counterparts, which historically has lead to increased travel demands. Furthermore, urbanized areas continue to experience a substantial influx of rural residents to urban jobs.
- The percentage of our population that is elderly varies greatly among North Carolina's counties, regardless of urbanization, which significantly impacts transportation needs of elderly citizens and people with disabilities. However the proportion of America's elderly citizens is growing at a faster rate than any other segment of the population, and North Carolina's elderly population is growing at an even faster rate than the nation as a whole. A larger elderly population will affect our state's social and economic structure. Mobility options for elderly

residents will become increasingly important.

- Rural counties typically have greater proportions of low-income families, people with disabilities and citizens who depend heavily on Social Security benefits, increasing the critical need for human service transportation. The percentage of North Carolina's rural residents who live in poverty remains relatively constant.

## 2.2 Public transportation in North Carolina: solid performance on a limited scale

North Carolina earned the national reputation as the "Good Roads" state because of its continued commitment to more than 77,000 miles of state-maintained highways. We currently invest more than \$1.7 billion of state funds in our highway system every year. To a much lesser degree, we also invest state resources in public transportation -- about \$20 million in 1996 -- to assist urban and rural communities and human service agencies. With the backdrop of solid economic growth and development during the past several decades and projections for continued expansion, coupled with current flexibility in federal funding, we have an important opportunity to shape transportation facilities and services to best serve all our citizens.

## **Public transportation in North Carolina today**

There are nine types of public transportation systems currently operating in North Carolina: human service transportation, rural general public transportation, urban transit, regional transit, vanpool and carpool programs, intercity buses, intercity rail passenger service, pupil transportation and passenger ferry service.(1)

During the fiscal year ending June 30, 1995, North Carolina's transit systems:

- Operated 1,901 buses and vans;
- Traveled more than 42.8 million miles;
- Transported more than 38.8 million riders;
- Incurred \$77.4 million in operating expenses;
- Received \$28.9 million in taxes and other operating revenues, including human service agency fees; and
- Required \$48.5 million in operating assistance.

Many of the nearly 40 million annual trips provided by public transportation systems serve citizens who have limited mobility for a variety of reasons. However, public transportation's greatest opportunity for impact and growth in North Carolina lies in providing better mobility to residents who may not yet realize that viable, safe, economical and convenient transportation alternatives are available.

## **Human service transportation**

Human service transportation systems work with local human service agencies to transport clients for medical, educational, employment, or recreational needs. They do not serve the general public directly. Riders must be referred by human service agencies. In the 1970s, based on a directive from Governor Hunt, NCDOT and the North Carolina Department of Human Resources began coordinating transportation services to make them safer, more reliable and more cost effective. Core agencies that utilize human service transportation include:

County social service departments -- for Title XX, Work First and Medicaid recipients;

- County, private, non-profit programs for the aging;
- Mental-health programs;
- Sheltered/vocational workshops; and
- County health departments.

There are 55 human service transportation systems operating in North Carolina ([see Figure 2B](#)). They are organized in one of three ways:

- Consolidated systems that provide their own services, each composed of a single transportation program that uses its own vehicles and drivers;
- Consolidated systems contracting for transportation services, each composed of a single transportation program that purchases transportation services and contracts for operations

- with private transportation companies;  
and

- Coordinated systems that represent two or more service agencies working together through a lead agency to maximize resources and efficiency.

Human service passengers historically include elderly citizens and people with physical or mental disabilities. Human service transportation has the potential to save considerable amounts of money by enabling these people to live independently and still get the care they need. Individuals who receive care while living at home save themselves, their families and government agencies an estimated \$22,000 in annual costs by not requiring institutionalized care. New or expanded programs, like Smart Start or Work First, recently have increased local demand for human service transportation. Combined receipts from agency contracts and fares cover 100 percent of total operating costs, however fares are optional and each local system decides its own fare structure.

### **Rural general public transportation**

Rural general public transportation systems provide mobility for human service agency clients and members of the general public. Because these systems receive federal grant funds for rural transit, the Intermodal Surface Transportation Efficiency Act requires them to offer services for general public riders as well as human service agency clients.(2) These systems integrate the two types of services using the same

vehicles.

There are 28 rural, general public transportation systems in North Carolina ([see Figure 2C](#)). They operate as single-county systems or multicounty systems. One system, AppalCART, also is considered to be a small urban system, classified in both categories because it provides service for rural areas of Watauga County and operates fixed-route service in Boone. Most rural systems provide basic transportation by subscription rides, prearranged by an individual, group or human service agency. They also offer dial-a-ride service, for which prospective riders must call to schedule in advance, and they may offer deviated fixed-route service, in which vehicles may operate off of defined routes and schedules.

Rural general public ridership increases about 2 percent each year, partly from increased requests by human service agency clients who need access to out-of-county medical services for specialized care that is unavailable in their local communities. Medical trips often include substantial layovers for drivers and vehicles because they have to wait during their passengers' medical appointments. The federal Job Opportunities and Basic Skills "JOBS" program, now replaced by Work First, and Smart Start initiatives also have increased ridership for rural general public transportation systems.

### **Intercity bus service**

Intercity bus service is one of a few

remaining examples of privately owned and operated transit modes in North Carolina. Intercity buses serve many cities and towns throughout the state. Most routes are concentrated in the densely populated region between Charlotte and Raleigh, with corridors of additional service along major U.S. highway routes to the east. The buses provide interstate connections to neighboring states and points beyond.

[Figure 2D](#) compares 1994 operating statistics for the two largest intercity bus systems in North Carolina, Greyhound Lines Inc. and Carolina Trailways.

NCDOT provides operating assistance of two cents per passenger mile, up to \$63,000 per year, for three Carolina Trailways routes in eastern North Carolina that otherwise would have been abandoned ([see Figure 2E](#)). Travelers' Aid programs around the state also receive approximately \$34,000 in federal funds each year to match 50 percent local funding to purchase intercity bus tickets for needy travelers. Figure 2E denotes ridership on state-assisted intercity bus routes during FY 1995-96.

## **Urban transit**

Urban transit systems provide fixed-route and dial-a-ride services. Three of North Carolina's transit systems also provide vanpool service. Fixed-route service typically uses buses and operates on a set schedule determined by the system's management with input from community leaders and citizens. Dial-a-ride service



requires prospective riders to request service in advance by calling to schedule a specific pickup location, boarding time and destination within the system's service area. The federal Americans with Disabilities Act of 1990 (ADA) mandates that urban transit systems must provide services for people with disabilities to meet ADA requirements by January 1997, and most urban systems offer dial-a-ride services to meet this requirement. Per-passenger costs for urban dial-a-ride services are nearly five-times greater than costs for urban fixed- route service.

There are 17 urban transit systems operating in North Carolina ([see Figure 2F](#)), of which Charlotte Transit System is by far the largest. Although Charlotte has the 34th largest population among U.S. cities, it has only the 83rd largest transit system in the nation. Comparisons with similar-sized, urban transit systems in other states show that North Carolina's systems:

- Operate significantly fewer miles of service per resident than their peers,
- Operate less transit trips per year, per resident, than their peers and
- Generally have the same level of ridership per revenue-mile as that of their peers.

These comparisons suggest that even though our state's urban transit service levels are lower than those in other areas, our transit systems are as efficient as their peers for the levels of service they provide.

North Carolina's systems generally

provide more cost-effective service than the benchmarked groups, even though we spend considerably less money per capita than most other states:

- The unit cost of service per mile and per passenger is lower for urban systems in North Carolina than for those in the benchmarked group;
- Our revenues as a percentage of costs are the highest in the group; and
- Assistance per passenger trip is lower than the others.

**Generally, these comparisons suggest that North Carolina's urban systems provide less service at lower overall costs and lower unit costs than comparable systems in other states.**

There are three major approaches to operations and management among North Carolina's urban transit systems. Several cities, including Raleigh, Winston-Salem and Greensboro, contract the operation of all their vehicles to outside management companies. Others, like High Point and Greenville, operate their vehicles directly. Other cities use a combination of direct and contracted operations, maintenance and management. Because state law prohibits public agencies in North Carolina from collective bargaining, publicly operated transit systems do not have unionized workers. However when systems have a private management company, the management company frequently bargains with unions that represent drivers and other

workers.

In North Carolina, most urban transit riders have low incomes, no access to a personal vehicle and no driver's license. They typically are elderly, female and African-American. For instance in Charlotte, Fayetteville and Winston-Salem, where there are large historically black colleges and universities, nearly 80 percent of passengers are African-American. Although there is a large percentage of elderly citizens using urban transit, the typical rider is about 35 years old. The proportion of commuter trips is surprisingly low for many systems, especially since many drastically reduce weekend service. Several systems report that less than 40 percent of trips are work-related.

The financial characteristics of urban transit operations vary by the size of the system. Generally, state funding represents only a very small part of total operating revenues. However for smaller systems, state funding makes up a greater proportion of total funds. With some exceptions, approximately equal percentages of federal funding, fare receipts and local assistance provide most revenue for urban transit operations.

Local governments set their own transit fare structures. Dial-a-ride fares also vary by system, destination or circumstance. Typical passenger fares for fixed-route, urban transit service in North Carolina generally range from 50 cents to 80 cents per one-way trip. Systems frequently offer

discounted fixed- route fares for senior citizens and people with disabilities. Some also offer discounted fares for students and general discounts with monthly passes or books of tickets. Most allow small children to ride free. The cost per passenger for fixed-route services tends to be four or five times lower than that for dial-a-ride service.

Ridership on urban transit, fixed- route and dial-a-ride, remained stable between 1994 and 1995, the most- recent year for which operating statistics are available. There was a small decline in fixed-route ridership and an increase in dial-a-ride ridership. The increase in dial-a-ride passengers reflects continuing expansion of paratransit services to meet increased demand spurred in part by the Americans with Disabilities Act.

### **Regional transit**

The Research Triangle Regional Public Transit Authority, or Triangle Transit Authority, was chartered in 1989 and began services in 1991 when the authority took over the Tri-A-Ride ridesharing program (see Appendix A). TTA began transit service in 1993 and currently operates four fixed bus routes to connect Raleigh, Durham, Cary, Chapel Hill and Research Triangle Park and shuttle service within the Research Triangle Park. The routes operate during peak commuting times and provide for transfers with the region's urban transit systems. TTA owns and operates its own vehicles, but contracts maintenance with

private companies.

TTA has received federal grants to purchase new vehicles, conduct planning studies and construct its own maintenance facility in fiscal year 1996-97.

Approximately 80 percent of TTA's funding originates from local revenues, including passenger fare receipts and a special fee of \$5 per vehicle collected with vehicle registrations in the three-county service region. Fares are based on travel-zone distances and range from \$1.00 to \$2.00, and passengers can purchase discounted monthly fare packages. Senior citizens ride for 50 percent of regular fare and small children ride free. TTA currently provides only weekday service, and riders are predominantly commuters.

TTA has federal grants to purchase 15 full-size and 20 mid-size buses. It will use the full-size buses to add express service and replace smaller buses on the Raleigh-to- Research Triangle Park route that often has standing room only. The mid-size buses will replace some of the original buses in TTA's fleet and enable the system to expand service to outlying communities.

TTA plans for regional rail service to begin operation in 2002. The first phase of the planned service will use existing railroad rights-of-way to connect Durham, Research Triangle Park, Cary, Raleigh and North Raleigh. TTA estimates initial construction costs to be approximately \$150 million and predicts the system could transport upwards of 14,000 riders each day by 2020. Long-term proposals expand

service to suburban areas, initially using existing rail corridors. With strong regional support, TTA currently is working to complete engineering studies, negotiate access agreements with railroads and develop detailed financial plans for regional rail.

### **Vanpool and carpool programs**

NCDOT assists with ridesharing programs for the state's three major metropolitan regions: MetroPool in the Charlotte region; Rideshare Services and Vanpooling for the Piedmont, known as RSVP, in the Piedmont Triad region; and Tri-a-Ride in the Research Triangle region ([see Figure 2G](#)). Rideshare assistance in fiscal-year 1994-95 was \$479,000 consisting of 43 percent local funds, 36 percent state funds and 21 percent federal funds. Figure 2G provides statistical information for FY 1994-95 ridesharing activities in North Carolina. The three regional programs administer and promote rideshare matching, carpools, vanpools, park-and-ride lots and other programs to encourage ridesharing and less use of single-occupancy vehicles.

Vanpool programs in the three metropolitan areas transport a substantial number of commuters at high vehicle occupancy rates, which lowers congestion, pollution and commuting costs. Vanpool commuter trips typically are more than 30 miles each way, a distance that is significantly farther than other commuter trips.

Based on 1990 census data, 77 percent of North Carolinians drove to work alone and 16 percent participated in carpools. Carpool participation rates ranged from 13 percent in Buncombe County to 34 percent in Tyrrell County. Because urban residents live closer to their jobs and are more likely to have access to personal vehicles, urban counties generally had lower carpool participation rates than rural counties.

Park- and- ride lots are provided in many rural and urban areas for the convenience of commuters who want to carpool, vanpool or, in some cases, use transit. The park-and-ride lot off NC 54 outside Chapel Hill has 512 spaces and is the most heavily used lot in the state.

### **Intercity rail passenger service**

Amtrak and NCDOT cooperate to provide intercity rail passenger service in North Carolina. Six trains serve 16 stations throughout the state, including:

- The north-south Silver Meteor, with early morning stops in Rocky Mount, Wilson and Fayetteville en route between New York and Florida;
- The north-south Silver Star with pre-dawn and evening stops in Rocky Mount, Wilson, Raleigh and Southern Pines en route between New York and Florida;
- The north-south Silver Palm, inaugurated in November 1996, with afternoon stops in Rocky Mount and Fayetteville en route between New York and Florida;

- The northeast-southwest Crescent, with early morning stops in Greensboro, High Point, Salisbury, Charlotte and Gastonia;
- The north-south Carolinian, with morning and afternoon stops in Charlotte, Kannapolis, Salisbury, High Point, Greensboro, Burlington, Durham, Raleigh, Selma, Wilson and Rocky Mount en route between Charlotte and New York; and
- The east-west Piedmont, with morning and afternoon stops in Charlotte, Kannapolis, Salisbury, High Point, Greensboro, Burlington, Durham, Cary and Raleigh.

The Piedmont and Carolinian are operated by Amtrak under contract with NCDOT. The two trains complement each other to provide roundtrip service, twice daily -- once in the morning and again in the afternoon -- between Charlotte and Raleigh. The Piedmont, inaugurated for NCDOT in 1995, travels from Raleigh to Charlotte in the morning and returns to Raleigh in the afternoon. The Carolinian travels from Charlotte to Raleigh in the morning, continues to Rocky Mount, Washington, D.C. and New York, and returns to Charlotte in the afternoon. Amtrak Thruway® bus service connects passengers between Winston-Salem and the Carolinian at Greensboro. Both trains offer morning or evening connections to Florida-bound trains.

NCDOT reimburses Amtrak 100 percent



of the net operating expenses for the Piedmont and 100 percent of the operating expenses between Rocky Mount and Charlotte for the Carolinian, but it maintains very different agreements with Amtrak for each train. NCDOT owns the equipment for the Piedmont but contracts the train's maintenance and operations with Amtrak. The Carolinian is wholly-owned and operated by Amtrak, which charges NCDOT for operating and capital expenses associated with the train's operation in North Carolina. Amtrak's charges to all states recently increased from 65 percent of long-term avoidable costs to 100 percent of the costs. Operating revenues for the Carolinian currently cover more than 80 percent of its operating costs.

The Piedmont transported some 25,000 passengers in its initial year of operation. Passenger boardings have grown by 44 percent to include more than 18,000 passengers during the first six months of the second year of operation. This rate of growth has the service on-track to meet its annualized goal of transporting 40,000 passengers per year at the end of its second full year of operation.

Cities in North Carolina with the highest proportions of originating or ending trips on the Carolinian include Raleigh, with 26 percent; Charlotte, with 22 percent; Greensboro, with 14 percent; Wilson, with 12 percent; and Durham, with 9 percent. These five cities account for 83 percent of all rail passenger activity in the state ([see Figure 2J](#)).

NCDOT also has operated a variety of special event trains. These trains include operation to the annual State Fair, special stops to coincide with community events and festivals and the Piedmont Prowler service to home games of the Carolina Panthers football team. These events typically sell out all available seats and are well-received by the communities along the route.

### **Pupil transportation**

With nearly 13,000 vehicles, the North Carolina Department of Public Instruction has one of the largest state owned school bus fleets in the nation. The 119 local education agencies (LEAs), throughout the state manage, operate and maintain the buses for the primary purpose of transporting public school students to and from school. Currently, there are no private bus operators transporting public school students in North Carolina.

The smallest LEAs in the state operate less than 10 buses. The three largest, Guilford, Mecklenburg and Wake Counties, each operate more than 600 buses. Most LEAs also maintain a 10 percent ratio of spare buses and a fleet of service vehicles. Together, all 119 LEAs in North Carolina transport nearly 700,000 pupils over approximately 125 million route miles, using about 20 million gallons of fuel every year, not including special class trips or summer transportation.

During the past four years, the number of student passengers in North Carolina

increased 5.3 percent, yet the number of school buses operating in the state increased less than one percent. During the same period, state expenditures for pupil transportation increased more than 15 percent, and local expenditures increased more than 30 percent. The disproportionate increase in local expenditures stems partly from expanded transportation for magnet school programs and the newly required minimum wage of \$8 per hour for drivers.

To qualify for state funding, LEAs must provide pupil transportation services that comply with state regulations covering driver wages, safety and student eligibility. The state permits LEAs to use state funds only for eligible transportation program management, bus operations, maintenance and repair costs. Since 1992, North Carolina has allocated funding to LEAs through the state Department of Public Instruction using a process that rates each LEA's efficiency in managing, operating and maintaining its bus fleet. LEAs with the highest annual efficiency ratings receive a slightly higher proportion of state funds approved by the General Assembly. This incentive-based funding program helps improve system performance and efficiency.

Excluding replacement costs for new equipment, North Carolina funds about 88 percent of local pupil-transportation costs each year. LEAs fund the remaining 12 percent of costs. Federally funded expenditures for supplemental driver wages, employee benefits and contracted

transportation services annually total less than \$1 million statewide. The state also provides capital outlay funds to finance 100 percent of the replacement costs for new buses, which the Department of Public Instruction allocates based on the age of each LEA's bus fleet. LEAs hold the vehicle titles for their own buses.

Depending on available funds, the state typically replaces buses after about 13 years of service. Statewide bus replacement costs average about \$40 million each year.

### **Ferry service**

The NCDOT Ferry Division, headquartered at Morehead City, provides ferry service for passengers, bicycles and motor vehicles in eastern North Carolina. The Ferry Division operates 36 vessels, including 25 ferries and 11 support vessels. Seven established routes traverse distances ranging from three miles to 30 miles. Collectively, the ferries make more than 100 trips per day during peak seasons. Some ferries serving short routes operate free of charge for passengers. Ferries serving longer routes, such as those crossing Pamlico Sound, charge one-way fares up to \$10 per automobile. Bicyclists and pedestrians pay significantly lower fares; trucks, buses and recreational vehicles incur higher fares.

Although the Ferry Division does not break down revenue figures by route, it typically covers about 7.5 percent of its systemwide operating costs. Operating expenditures annually exceed \$18 million

and revenues total approximately \$1.5 million. The annual net cost per passenger in fiscal-year 1994-95 was about \$9.

Understandably, the ferry system's purpose is not to generate revenue but to provide needed transportation for local residents and tourists where bridges would be either infeasible (for example across Pamlico Sound) or extremely expensive. The ferries also serve as tourist attractions.

Notes:

1. While ferry services and school bus systems are included herein, the focus of the Transit 2001 Commission is on the other seven categories.

Ferries cater primarily to the seasonal tourist trade (with some exception), and the pupil transportation system serves a very defined, captured market. As such, the interface of these systems with other transit operations is relatively minimal.

2. Rural general public transportation is funded under Section 5311 of Title III, the Federal Transit Act Amendments of 1991, which is a part of ISTEA.

## 2.3 Governance and Managing Growth

In one very important way, responsibility for providing highways and transit is quite different. The North Carolina Department of Transportation has the clear mandate to plan, build and maintain North Carolina's 77,000-mile highway system. North Carolina has no county roads (and no county ad valorem taxes are used for roads). Cities and towns have street systems and receive a significant amount of funding from the state (the "Powell Bill") to maintain that system. Most primary arteries within municipalities are state system roads.

Transit, on the other hand, is clearly a local government responsibility. The North Carolina Department of Transportation has provided matching funds as well as planning and technical assistance to support local transit, but the primary burden falls to local government.

Overall, the governance of transit systems and services in North Carolina is similar to other states in that many different types of institutions provide or sponsor a wide variety of public transportation

services. For example, there is a mixture of services that are open to the general public, including fixed-route transit, carpools, vanpools and park-and-ride programs, and there are services operated on behalf of the clients of sponsoring human service agencies that generally are not available except on a subscription basis. Dial-a-ride services provide transportation for rural residents. State sponsored intercity passenger trains link major cities. North Carolina also helps provide intercity bus service for some smaller communities.

Despite a wide range of federal and state policies and program requirements, community leaders and local transit managers have significant control over the nature and extent of public transportation in North Carolina. Transit managers must work within budgetary constraints to provide the levels and types of transportation services required by local governments, but they have reasonable freedom to determine schedules, facilities and equipment for their systems. Usually, local elected officials dictate areas of the community for public transportation to serve, and transit boards and general managers determine the most efficient routes and schedules to fulfill the transportation need using the system's manpower, facility, equipment and financial resources.

Similar to other public services nationwide -- such as waste collection and police protection -- urban transit systems do not recover all operating costs with

farebox revenues. Rather, in the cases of urban transit and rural general public transportation, the sponsoring local governments usually provide general fund revenues to make up the difference between costs of operation and farebox or user receipts. This assistance varies, ranging from 30 percent to about 70 percent of the operating deficit -- defined as the difference between operating costs and fare receipts. The level of local assistance depends on many factors, including policies that local governments have with regard to the nature and extent of transit services they wish to make available. For human service transportation, sponsoring human service agencies normally pay 100 percent of operating costs with local, state or federal funds, supplemented by public, private or charitable contributions.

While local governments control policies that direct service levels for most public transportation in the state, some urban systems are managed by private management companies under contract with local governments. This also is typical in other areas of the country. In many contract services, operating personnel such as drivers, mechanics or supervisors, work for the contracted company instead of the municipality or transit system.

All but one of the urban transit services in North Carolina primarily serve and are governed by single municipalities rather than regional transit agencies. The Research Triangle Transit Authority (TTA)



is the exception. However, the major municipalities in TTA's service region, Raleigh, Durham and Chapel Hill also operate their own separate urban transit systems and do not replicate TTA's services.

In many urbanizing states, transportation solutions are becoming more multimodal, more regional in scope and more sensitive to land use impacts. Particularly since the enactment of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), state and local transportation planners and policy makers have modified their approach to the provision of surface transportation facilities and services. In many regions, officials have noted that it has become increasingly difficult and expensive to "build their way out of" congestion by adding new highway lanes or entirely new facilities. Instead, highway and transit planners are working together to improve the productivity of existing highways by expanding park-and-ride lots to encourage transit, adding or converting travel lanes for high-occupancy vehicles and implementing new technology like ramp metering or other intelligent transportation systems.

ISTEA requires greater attention to the preservation and increased efficiency of the existing highway network through enhanced management of the entire transportation system. It calls for stronger, mutually supporting linkages between transportation investment decisions and land use and development actions. In

keeping with these federal initiatives, state and local agencies must embrace new strategies and policies to increase the availability and use of high- capacity, shared ride transportation. These strategies include changes in:

- Transportation services and operational policies;
- Land use and travel demand management practices;
- Institutional relationships and management practices between state agencies and local governments and the private sector; and
- Statutes and regulations allowing transit solutions to solve travel problems.

The strategy of seeking multimodal solutions, rather than just adding highway capacity, is based on an enhanced understanding of and appreciation for the role of public transportation in achieving fundamental community goals. This new focus requires greater popular and political support for initiatives that increase the relevance, availability, use and effectiveness of public transportation. It also must include critical actions for transit operations, coordination and funding.

**Existing transit systems provide an excellent base upon which to develop and encourage new travel choices. The best transportation future for our state is a partnership among federal, state and local governments and the private**

**sector, which will provide the know-how, funding and leadership to realize the Transit 2001 Commission's vision. Public transportation and highway interests together will make these opportunities a reality.**

Transit 2001 Technical Report  
Chapter Three

# Funding Public Transportation

- **In terms of state funding for transportation, transit receives only about one cent of every dollar expended.**
- **Still, total investments in transit services in North Carolina -- including fares -- total more than \$108 million annually from all sources. Local contributions, including fare receipts, provide a majority of the revenue for public transportation, 55 percent, and the state provides 18 percent of the total.**
- **Federal legislation (ISTEA) provides for considerably more flexibility in the use of surface transportation funds than has been exercised by the state thus far.**

North Carolina has long been recognized as having one of the premier highway systems in the country. In fact, our state maintains the nation's largest highway system, including more than 77,000 miles of

roadways. Time and again, we have adopted new programs and increases in gasoline taxes and other user fees to support urban and rural roadway expansion and maintenance. These have included the creation of the state's \$9 billion Highway Trust Fund and programs to build urban loops and extend strategic, four-lane highways to within 10 miles of 95 percent of the state's residents. These extensive highway facilities, in conjunction with municipal streets, provide the basic network on which our state's current public transportation systems operate, except for rail passenger services.

### 3.1 Transit fits North Carolina's transportation investments

Within the parameters set by federal and state legislation, the North Carolina Board of Transportation and the Secretary of Transportation, who serves as its chairman, determine where and how NCDOT distributes transportation funding. NCDOT oversees a great number of construction, rehabilitation and maintenance activities, including highway projects, rail programs and public transportation.

Nearly 80 cents of every dollar spent on transportation by North Carolina originates from gasoline taxes and other vehicle fees. From a total annual budget of more than \$2.2 billion, NCDOT allocates nearly 50 percent for highway construction and 20

percent for highway maintenance. The remaining 30 percent funds a wide range of programs, including NCDOT administration for the Division of Highways, Division of Motor Vehicles and other operating units; the State Highway Patrol; driver education program; municipal highway aid (the "Powell Bill"); contributions to the North Carolina general fund; ferries; rail programs and public transportation.

Specifically, as noted by [Figure 3A](#), public transportation and rail receive approximately \$20 million in state funding and \$28 million in federal funding; or about 2.2 percent of the total. Strictly in terms of state outlay, public transportation receives only 1.1 percent, or \$20 million of \$1.7 billion.

Although \$20 million is a very small portion of the annual budget, the amount actually represents a greatly increased commitment by the administration of Governor James B. Hunt to public transportation. In the early 1970s the North Carolina General Assembly for the first time provided limited seed money to support urban transit. They appropriated \$500,000 to support urban bus systems and mandated that the funds only could be used for capital projects such as equipment purchases or expansion of real assets. The use of state money to fund transit operations was strictly prohibited.

Since the 1970s, our funding commitment to public transportation has grown slowly, but steadily. When the

General Assembly established NCDoT in 1972, it created the opportunity to assist communities with planning and developing public transportation. This task fit nicely with notions that the new Department of Transportation, different from the previous Highway Commission, should address all modes of transportation and that the state had a legitimate role and public purpose to ensure safe, efficient and effective means of transportation for all North Carolinians. A Director of Public Transportation was appointed to oversee the distribution of state transit funds. Gradually, NCDoT became the key coordinator for state and federal funds and technical assistance to rural and human service transportation, regional and urban transit and the intercity rail program.

In funding public transportation activities, the federal government, local governments and the state truly are partners. For most endeavors, each contributes a portion. Relative funding proportions can vary greatly from program to program, depending on congressional authorizations, state enabling legislation and appropriations and local budget actions. Administrative actions and the creativity of governmental agencies at each level also can affect the balance of funding.

States, of course, vary significantly in their funding of public transportation programs. Those with large metropolitan areas, like New York, Pennsylvania, Georgia or Virginia, provide substantial assistance to urban bus systems and

regional rail programs. The nature and extent of that funding, as well as its sources, vary considerably from state to state. Some, like North Carolina, help fund rail passenger services otherwise not provided by Amtrak. Others, also including North Carolina, help fund public transportation services in rural areas. Many states consolidate and augment transportation funding among urban and rural human service programs.

**Transit system fares typically cover less than half of capital and operating costs.**

Construction, rehabilitation and maintenance of the nation's and states' highway systems often are showcased as excellent examples of the economic principle of user pays. Indeed, highway users do pay a very large portion of the costs of highways, through gasoline taxes and other fees. Transit systems also generate user revenue from fares collected from each rider. In almost every case, however, transit farebox revenue is insufficient to cover even 50 percent of the operating costs of the transit system, so other funding must be identified. Federal, state, local -- and sometimes private -- funds make up the deficit and allow the transit systems to provide their public service. Public funding is justified by the economic and societal benefits of transit to the overall transportation system and economy.

In summary, the federal- state- local



public transportation partnership, along with farebox revenue, is a funding patchwork built up over decades. This is true in North Carolina and all states. While transit programs often are structured to reflect federal programs and incentives, states and local communities deliver services largely based on their own initiatives and response to local markets.

### **Typical costs for major transportation projects**

Transportation infrastructure investments are not cheap. Constructing one mile of Interstate highway typically costs \$6 million, plus right-of-way costs. Passenger rail cars can cost nearly \$2 million each. An urban transit bus can cost \$250,000, and a transit van can cost \$32,700. Widening urban streets from two to five lanes can cost nearly \$2.5 million per mile, plus right-of-way costs. Right-of-way costs are expensive, currently averaging about \$2.5 million per mile in North Carolina. The right-of-way costs for Charlotte's urban loop however, have exceeded \$14.2 million per mile. Initial costs for Triangle Transit Authority's proposed regional commuter rail system, including acquisition, construction and equipment, could exceed \$150 million. The North Carolina Board of Transportation recently approved the most expensive, single transportation project in our state's history, the \$120 million Neuse River bridge now under construction in New Bern. The cost for this project alone

exceeds all investment and operating revenues for all 97 public transportation systems in North Carolina in 1995, including statewide fare receipts and assistance from all levels of government.

## 3.2 Current funding arrangements and trends

In North Carolina, federal, state and local contributions for public transit totaled about \$108 million in 1995, including fare receipts. Of these funds:

- Urban and regional transit systems accounted for approximately 65 percent of expenditures and provided 84 percent of the total passenger trips;
- Rural and human service transportation accounted for approximately 23 percent of expenditures and provided 15 percent of the total passenger trips; and
- The state provides approximately 63 percent of the intercity rail investment, and the federal government does not participate directly in funding the service.

The state's portion of funding for 1995 amounted to:

- About 25 cents per passenger for urban and regional transit systems;
- About \$1 per passenger for rural and

human service systems; and

- About \$20 per passenger for the relatively new intercity rail passenger service.

Prior to 1970, federal transit funding historically was limited to capital purposes. In the late 1970s, the federal operating assistance program was enacted.<sup>(3)</sup> Recently, Congress reduced federal operating assistance by half. Many public transportation analysts believe that loss of the federal operating subsidy program may not be as important an issue as it once was. In fact, in larger cities, federal operating assistance provides a relatively small percentage of total operating costs. For smaller communities, however, including many in North Carolina, the impact could be substantial.

[Figure 3B](#) shows that, in North Carolina, local contributions, including fare receipts, provide the most revenue for public transportation, 55 percent. State allocations provide 18 percent. Transit systems use most of the state and local funding, \$70.8 million out of \$80 million, to support operations. Federal funding provides more than 70 percent of capital investments. And of the \$108 million invested in North Carolina public transportation in 1995, approximately 19 percent funded capital investments, 74 percent funded operations and 7 percent funded administration, research and planning.

## **Two primary sources of state revenue for public transportation**

[Figure 3C](#) illustrates the sources, programs, funding amounts and eligible uses of state transit funds. Note there is no contribution today from the state General Fund, as there was in the early years of the state's public transportation program.

The nearly \$20 million in state funds for transit originates from two sources:

- Discretionary transfers from the state Highway Trust Fund. The Highway Trust Fund totalled about \$700 million in fiscal year 1995-96 and is supported primarily by revenues from motor fuel taxes, vehicle taxes and vehicle title fees.
- Allocations from the state Highway Fund. According to statute, an amount that equals at least 50 cents times the total number of registered vehicles in the state is allocated to transit from the state Highway Fund.

Discretionary Highway Fund allocations support North Carolina's intercity rail passenger service in recognition of its value as an alternative to highway construction.

Note:

3. Capital investments are those that cover the costs of acquiring or maintaining long term assets such as property, facilities and vehicles.

Operating investments are those that cover the costs of providing services, including salaries, wages, materials, supplies (i.e., fuel, oil, tires, etc.) and maintenance equipment.

### 3.3 The federal role in funding transit

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) provides opportunities for increased flexibility in funding surface transportation programs. ISTEA has been in place for about five years and is up for reauthorization during FY98. It provides the most sweeping innovations in the use of federal transportation dollars in U.S. history. Key sections that greatly impact public transportation include:

- More funding with fewer constraints. ISTEA continues the historical increase in highway funding and provides the first substantial increase for public transportation in a decade.
- More consistency in applying federal rules among highways and public transportation. ISTEA standardizes the federal share of funding at
- 80 percent for most projects. Highway and transit programs both fund state planning and research activities.
- Funding flexibility. With over \$153 billion authorized for the six-year

period (FY 1992-1997), ISTEA maintains divisions between highways and transit but blurs the line between them. It enables states to expend more than \$70 billion of the \$153 billion authorized for fiscal years 1992-97 for either highways or transit, depending on state and local initiatives. ISTEA's Surface Transportation Program (STP) is the most flexible of ISTEA's major programs.

- **Project selection.** By requiring states to select projects in cooperation with Metropolitan Planning Organizations, ISTEA essentially increases the authority of local governments for project selection.
- **Emphasis on clean-air objectives.** A new approach to federal funding uses ISTEA to help meet requirements of the federal Congestion Mitigation and Air Quality Program, called CMAQ. High-occupant-vehicle highway projects and certain transit capital projects are eligible.
- **Innovations.** ISTEA places great value on new ideas for improved transportation efficiency and innovative technologies, including intelligent transportation systems, and the ability to charge tolls for existing and future roads constructed with federal funds.

**There are several federal surface transportation programs that directly fund public transportation**

**There are several federal surface transportation programs that directly fund public transportation projects based on state and local initiatives by redirecting traditional (4) highway funds.**

ISTEA designates these federal funds for public transportation programs:

- Section 5307 formula grants, formerly known as Section 9, provide funds for transit capital and operating expenses and distribute them to urban areas according to a formula. Under certain conditions, states can use the capital funds for highway purposes.
- Section 5309 formula and discretionary programs, formerly known as Section 3, include three subcategories, new starts, rail modernization and bus, which are subdivided further. Except for rail modernization, the funds are discretionary.
- Section 5311 and Section 5310 programs, formerly known as Section 18 and Section 16(b)(2), distribute funds by statutory formula to states for suballocation to rural areas. Section 5311 provides assistance for rural general public transportation and Section 5310 provides assistance for rural human service transportation.
- Planning and research programs. Six planning and research programs receive less than 3 percent of total transit funds.
- Certain ISTEA programs authorized in the highway section of the legislation,

allow states to redirect federal funds for public transportation. Major ISTEA programs such as the National Highway System, Surface Transportation Program or Congestion Mitigation and Air Quality Improvement Program currently provide great amounts of flexibility for states and local governments to use federal categorical grant program funds as they choose. For example:

The National Highway System, or NHS, is a system of newly designated corridors of national interest composed of about 150,000 miles of mostly existing highways, including the Interstate highway system. Public transit facilities, regional rail and intermodal transportation facilities may be funded with NHS allocations. Fifty percent of NHS funds in each state may be transferred to the Surface Transportation Program (STP), and all 100 percent of NHS funds may be transferred with the permission of the U.S. Secretary of Transportation. The STP program allows extensive highway and transit flexibility.

The Surface Transportation Program (STP) reflects ISTEA's multi-modal focus by allowing states to use funds for virtually any highway, capital transit or non-motorized transportation need.

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for states



with air quality non-attainment areas. Projects must contribute to better air quality and cannot increase capacity for single-occupant vehicles during peak travel times.

Bridge Replacement and Rehabilitation provides funding for bridge projects on any public road. States can shift up to 40 percent of the funds to NHS or STP programs, which have public transit eligibility.

**Many states have used existing federal enabling legislation to shift capital funding between highway projects and public transportation projects and vice versa.**

One of the major provisions in ISTEA that funds surface transportation allows states to flex funds between traditional highway projects and transit.<sup>(5)</sup> While there are strict rules governing the process, many states have used this flexibility to increase the amount of funding available for transit, mostly for capital projects. To the extent that states take advantage of this flexibility, transportation needs and policies, rather than federal funding structures, determine state and local spending decisions.

the first four years of ISTEA authorization, the most 'flexing' of surface transportation funds to transit has occurred in states with the largest urban areas, including California, \$410 million; Massachusetts, \$127 million; New York, \$580 million; or Pennsylvania, \$263 million. North Carolina's neighboring

states shown in Figure 3D flexed more than \$12 million on average through 1995. The national average is about \$42 million per state flexed to transit.

A few states, including North Carolina, have 'flexed' funds from transit projects to highway projects where combined highway/transit funding seemed appropriate. Examples include construction of the access road for a park-and-ride lot in Chapel Hill.

While hundreds of millions of dollars in federal funds currently are eligible for 'flexing,' various other proposals for federal surface transportation reauthorization, including the STEP 21 proposal supported by NCDOT, reportedly could provide even greater funding flexibility for highway programs and public transportation at state and local levels beginning in federal fiscal year 1998. ([See Figure 3D](#))

Notes:

4. "Traditional" refers to pre-ISTEA categorical programs which restricted the use of the Highway Account of the (federal) Highway Trust Fund to highway purposes only. This is no longer the case. In fact, Surface Transportation Program (STP) provisions are identified in Title I - "Surface Transportation" of ISTEA, and the law is clear in allowing 100 percent of these funds (and portions of other programs as well) to be used for either highway or transit capital projects.
5. "Flex" or "flexing" is the unofficial label given the process of re-designating and spending federal funding from one of the highway categorical programs to a transit project, or vice versa.

## 3.4 Emerging practices for transit funding and finance

Transit funding often refers to direct federal, state or local assistance for eligible transit projects or programs. Transit funding typically is budgeted annually by governments. Transit financing, on the other hand, represents a wide range of approaches for obtaining new revenues or leveraging traditional government sources through the creation of bonds, revolving loan funds, public-private partnerships or other innovations. Creation of a direct value for the investor is a central component of transit financing mechanisms.

**In terms of revenue sources and uses, North Carolina's approach to funding public transportation is similar to many other states.**

Many states rely on at least two sources of revenue to fund transit, discretionary transfers from general funds or highway funds, and dedicated sources such as lotteries, special taxes or sales taxes. Distinctions between discretionary funds

and dedicated funds are important. Transit systems in states that primarily rely on discretionary funding sources, such as North Carolina, receive funds at the discretion of their state legislatures, and the resulting state contributions can vary from session to session and year to year. Transit systems in states with dedicated funding sources receive more consistent and more reliable state contributions.

In addition to state sources shown by [Figure 3E](#), note that several states, such as California, New Jersey, New York and Pennsylvania, receive large amounts of revenue from independent toll and turnpike authorities. For example, the Delaware River Port Authority contributes tens of millions of dollars each year to PATCO, the high-speed commuter rail line linking suburban New Jersey and Philadelphia.

It is common for states such as North Carolina to allocate a portion of highway user fees for transit purposes, essentially by funding public transportation with highway fund revenues. This sort of funding also occurs in California, Florida, Michigan, Virginia and other states. Some, including Ohio and Pennsylvania, allocate general funds, rather than highway funds, for transit purposes. In addition, states use a wide variety of revenue sources to fund and finance transit. Some identify a specific source from which money for transit is taken, some commit annual amounts or percentages of money to transit and some use nontraditional sources such as lottery proceeds, special taxes, tolls or benefit

assessment districts.

Like many states, North Carolina allocates public transportation investments for a wide range of needs, including urban operating assistance, which is the largest single component of state transit funding/expenditure in North Carolina, urban capital investments, rural capital investments, rural operating support, support for transportation for rural elderly citizens and rural residents with disabilities, intercity bus services and intercity rail passenger programs. North Carolina does not provide fare subsidies to urban systems for elderly citizens or people with disabilities, as do some other states.

### **North Carolina lags many states in per-capita expenditures for public transportation.**

Many factors determine state expenditures for transit, including the extent of urbanization and other demographic characteristics. The most important factors affecting the level of state transit investment, however, are:

- The relative importance of transit to elected officials as they compare it to other state and local needs; and
- The traditions or policies regarding the levels of responsibility for transit funding borne by state and local governments. Figure 3F demonstrates this wide variability in funding among states.

**In North Carolina, local communities provide most funding for public transportation, except for the relatively new intercity rail passenger program.**

Local revenue sources in North Carolina, including fare receipts, have a primary role in funding transit programs by providing approximately 55 percent of funds necessary to cover capital and operating costs. Nationally, local sources, including fare receipts, account for about 59 percent of total transit capital and operating funds.

[\(See Figure 3F\)](#)

Local transit funding mechanisms generally are straight-forward. Most communities make either discretionary contributions from a general fund or dedicate specific portions of it. For example, in North Carolina, Asheville, Fayetteville, Gastonia, Greenville, Hickory, Rocky Mount, Wilmington and Winston-Salem use general-fund revenues, but Carrboro and Chapel Hill specifically dedicate a portion of property tax revenues for transit purposes. Charlotte and the three counties served by Triangle Transit Authority -- Durham, Orange and Wake -- dedicate funds for transit from vehicle registration fees. Charlotte also uses a local option sales tax to provide transit funding.

## 3.5 Implications and opportunities

Our state's substantial population growth and economic development during the past decade provides an opportunity and challenge for future transportation infrastructure and services. We must continually evaluate our approach to surface transportation facilities and services in accordance with the Transit 2001 recommendations and other demands on the state's transportation system. We should give special attention to accommodating further growth in urban areas and metropolitan regions, providing better mobility for all citizens and making transportation decisions that positively affect the environment and preserve our way of life. Fortunately, the financial solutions to this challenge are well understood and available, however, we need enlightened, proactive leadership to put these solutions into action!

The forces of change pushing traditional, highway-dominated transportation decision making arise from:

- Federal funding programs in place today which support substantially larger investments in rural and human service transportation, urban and regional transit and intercity rail passenger service.
- Changes in local leaders' and elected officials' views about transportation initiatives, especially in urban areas. With increased support and development of transit, opposition to highway expansion is not uncommon.
- The fact that small shifts in the overall budget could provide substantially more funds for public transportation, even though the highway portion of NCDOT's budget (98 percent) is substantial and likely will continue to be vastly dominant. For example, a shift of only two percent could provide an additional \$45 million each year for investment in transit or high-speed rail.
- Major nationwide initiatives to optimize the use of existing highways through technologically-advanced intelligent transportation systems and other innovations. Regions are realizing they can no longer 'build their way' out of traffic congestion by continuing to widen roads. Many states are considering alternatives to highway expansion.
- The degree of collaboration and cooperation in transportation planning, funding and financing is increasing as states share decision making



responsibilities with local governments, metropolitan planning organizations and other regional agencies, enabling local communities to have more influence over transportation projects and project selection.

These forces of change strongly suggest that we should develop a transportation program for North Carolina which emphasizes achieving the proper balance between highway and public transportation investments. We have the opportunity to show how highway and transit programs together can support improved land use planning and decision making throughout North Carolina. A comprehensive action agenda harnessing the mutual support of highways and public transportation will lead to better transportation solutions, more efficient use of scarce tax dollars, and a new era of cooperation and planning for North Carolina in the 21st century.

**We must realize the potential positive, widespread impact of a small increase in our state's funding commitment to transit and the benefits thereof: a wider array of travel choices, increased availability of transportation for those whose mobility is limited in some way, and improved and more efficient use of the existing highway system. With a projected decrease in federal funds for public transportation, the state must provide the leadership through incentive funding and through granting more**

**opportunity for local governments to raise money for transportation purposes. This new commitment translates into jobs, educational opportunities, continued economic prosperity and preservation of the North Carolina style of living.**

Transit 2001 Technical Report  
Chapter Four

# Public Transportation is a Sound Investment

- **Increased transit availability and use directly serves many objectives that are critical to North Carolina's future: economic growth, support for dependent residents, environmental protection and fiscal stability.**
- **It is becoming more and more clear that we cannot build enough highways to solve our traffic congestion problems. Increased availability and use of public transportation preserves the capacity and extends the life of our highway network.**
- **The economic returns to the state and metropolitan regions from building and maintaining effective public transportation services exceed the costs many times over.**

There are many ways to measure the value of public transportation to local

communities. Until recently, however, the traditional view has been that public transportation is necessary only to meet the travel needs of people who do not have access to personal vehicles. This narrow and outdated perspective has shifted to a broader recognition that public transportation serves increasingly wide and crucial public objectives, including economic, social service and environmental needs.

These objectives, however, can come in conflict. Efforts to reduce transit expenditures -- a fiscal objective -- could conflict with service expansion necessary to meet civil rights requirements of the Americans with Disabilities Act. Increases in ridership and market share -- transportation and economic objectives -- could conflict with the need to reduce expenditures -- a fiscal objective. Because of these complexities, the value or success of public transportation may not be appreciated completely without fully investigating and considering the many objectives that transit is expected to fulfill.

As multiple objectives become defined more clearly, the means for measuring the value of public transportation will broaden. Today, however, the emerging consensus at all levels of government and in communities of varying sizes suggests that we must enhance the long term role of public transportation as an essential strategy in preparing for the future, and that improved and expanded transit services are sound investments.

## 4.1 Assessing the value of public transportation

There are many ways to characterize the value of public transportation. Essentially, public transportation performs either an economic function or a social service function or both, and local communities determine the extent to which public transportation addresses and balances these functions at the local level.

In larger urban areas and metropolitan regions, public transportation frequently focuses on supporting economic activity. In these settings, transit concentrates on serving peak hour commute trips, providing access to jobs for workers and expanding labor markets for employers. In this economic context, we can measure the value of public transportation by the additional commuting capacity it provides over the existing highway system and the proportion of commuters that transit accommodates in major travel corridors during peak commuting times. For these transportation corridors, it often is impossible or imprudent to expand highway capacity to meet peak-hour travel requirements. Public transportation increases the ability of the corridor and the surrounding region to accommodate more economic activity, growth and expansion, often at lower costs than other transportation alternatives.

In smaller urban areas and rural communities, public transportation

typically focuses on meeting the needs of citizens who have limited transportation options. This focus is the principle objective for North Carolina's rural general public transportation and human service transportation systems. Public transportation also provides critical support to local economies in rural areas through improved access to employment, education and job-training opportunities.

We can describe the broad value of public transportation in terms of economic and social service functions, but there are more specific impacts we also must consider, such as those listed in Figure 4A. Some of these impacts can be measured in quantitative terms while others cannot. Therefore, we must judge the value of investing in public transportation by using a combination of objective, quantitative measures, and more-subjective, qualitative measures.

### **Quality of life**

While each impact listed in Figure 4A reflects the potential value of public transportation, it is important to establish and measure links between these impacts and the quality of life goals central to Transit 2001: to protect the character of our communities, maintain our environment and preserve our way of life. We should view public transportation's value with these fundamental goals in mind. Useful frameworks for this assessment only recently have been developed. The study "Measuring and Valuing Transit's Benefits

and Disbenefits," by Cambridge Systematics, Inc. for the Transit Cooperative Research Program, ties together and traces broad sets of impacts of increased transit investment and use.

With the shared desire to preserve and improve our way of life in North Carolina as a starting point, we can say that our quality of life has improved when:

- Economic security increases for households and businesses;
- Personal safety and neighborhood security are enhanced;
- Environmental quality is preserved; and
- The fiscal integrity of government is maintained.

Expanding the availability and use of public transportation can affect each of these fundamental, quality of life measures positively by improving mobility and access to jobs, education, human services and recreation.

There is growing evidence that increased public transportation investment and use provides real benefits for communities of all sorts and sizes. Generally, local economies benefit from public transportation because businesses can achieve better productivity, less absenteeism and lower rates of employee turnover because alternatives to personal vehicle use are available. In regions where transit has a major role in meeting peak hour commuting needs, the efficiency of

transporting freight and goods increases greatly. Areas that invest in fixed guideway transit, such as the regional rail system which is being proposed in the Research Triangle, or busways which are under review in Charlotte, experience growth in business, commercial and industrial development. This development typically occurs in patterns that both improve business productivity and reduce the cost of public services. All of these effects underscore the economic relevance of enhanced public transportation.

Because public transportation is much safer than personal vehicle use, increased availability and use of transit reduces personal, corporate, governmental and societal costs associated with traffic congestion and vehicle collisions. Regional rail and other high capacity transit services also are much less damaging to the integrity and character of communities than the presence of major highway facilities.

Public transportation has less of an impact on the environment than streets, highways, parking facilities and other required accommodations for personal vehicles. The availability and use of public transportation can significantly reduce motor vehicle emissions, improve air quality and improve water quality by limiting roadway runoff and reducing levels of toxic, motor vehicle- related fluids.

Finally, increased public transportation investment and use encourages development patterns that reduce the cost



to government of infrastructure and public services. Public transportation also can increase property tax and real estate tax revenues for local governments, through its support of higher density development.

## 4.2 Public transportation's contributions to our economic growth and vitality

Each impact noted in Figure 4A also affects the economy. Ideally, we want to express economic impacts in terms of dollars. And in some cases we can calculate the direct, monetary value of increased public transportation investment and use. In other cases, it is more difficult to confidently estimate the economic or monetary effects of increased transit investment and use, either because key cause-and-effect relationships are unclear or because we lack data and information to make reasonable impact estimates. In most cases, however, logic and anecdotal information clearly indicate that the economic effects of increased public transportation investment and use are positive and significant.

### **Broad economic benefits of public transportation investment and use**

For the economy, we can estimate the

value of investments made in capital projects for public transportation and transit operations by using concepts of direct, indirect and induced spending -- the "multiplier effect" of transit investment -- to translate the invested money into increased wage, salary and business revenues. Recent analyses suggest that every \$1 of capital investment in transit produces \$3 to \$3.50 in business revenues. Similar studies show that a \$100 million investment in transit capital projects creates 5,800 new jobs, and a \$100 million investment in transit operations creates 7,300 new jobs. (6)

Recent analyses have also shown that improved transit service increases productivity and profitability across the economy as a whole, on both a regional and statewide basis. One study in Philadelphia indicates that "in terms of total economic impact, the return to the region and the state [of full rehabilitation and continuing operation of transit services in the Philadelphia region] would be over nine dollars for every dollar spent [on transit]..." (7) Studies conducted in the Chicago region found similar results.

### **Cost reduction and cost avoidance for local and state governments**

Recent studies also show that expanded public transportation directly or indirectly reduces state and local government expenditures for public services and

infrastructure. Studies in New Jersey and Florida indicate that the costs of roads, schools, and water and sewer facilities can be significantly lower in development patterns that are conducive to increased transit use.

Communities in Michigan and California reduced expenditures for pupil transportation by extensively relying on and partially underwriting the services of public transportation operators to meet pupil transportation needs. In Miami, innovative Medicaid agencies reduced transportation costs by purchasing regional transit system passes for clients, which allowed clients to use the passes for non-medical trips, provided local transit systems with an added source of revenue and reduced medical service costs.

We also can measure the cost savings from increased transit availability and use compared to the costs incurred from personal vehicle use. External costs of personal vehicle use -- costs not recovered from highway users but borne by society as a whole -- are estimated to be as much as 15 cents per vehicle-mile traveled.<sup>(8)</sup> To the extent that government pays these costs, we can estimate savings from the decreased use of personal vehicles caused by increased use of transit. For example, if expanded transit service captures only five percent, or 3.6 billion vehicle miles, of the current 71.9 billion vehicle-miles annually traveled in North Carolina, the state's annual external

cost savings could exceed \$500 million. A large portion of this total likely represents expenditures by state and local governments that never are recovered from personal vehicle users.

Expanded availability and use of public transportation affects much more than budgets of transportation agencies. These recent analyses show that increased transit investment and use can lead to significant savings for many public facilities and services.

### **Economic savings from environmental and safety benefits of transit**

Our choice of travel mode directly affects our success in achieving environmental and safety objectives. Increased availability and use of public transportation significantly reduces negative environmental impacts and the frequency and severity of traffic collisions. Figure 4B provides a comparison of accident incidence for different modes. In the case of environmental impacts, it remains difficult to fully estimate the benefits of less pollution in quantitative or monetary terms. However, we can directly relate decreases in highway use to absolute reductions in vehicle emissions and land consumption. This also is true for the safety impacts of transit. Fewer personal vehicles using streets and highways directly results in fewer collisions. The federal government has developed dollar

estimates for the cost of collisions that could be avoided with increased use of transit. In cases of the environmental and safety impacts of increased transit availability and use, we can capture much of the costs already borne by society and government through government savings and cost avoidance.

Notes:

6. "National Impacts of Transit Capital and Operations Expenditures on Business Revenues", American Public Transit Association, January 1984. "Employment Impacts of Transit Capital Investment and Operating Expenditures", American Public Transit Association, April 1993.
7. Popular Summary Report. "Measuring and Valuing Transit Benefits and Disbenefits", Transit Cooperative Research Program, Project H-2, May 1996.
8. Lee, Douglas, "Full Cost Pricing of Highways", USDOT, January 1995.

## 4.3 The importance of transit for people with limited options

For elderly citizens, people with disabilities and others without access to personal vehicles or those who are unable to use them, public transportation provides more than just an option -- it is their vital link to the community. Public transportation provides crucial access to healthcare and human services and reduces public costs for the delivery of those services. For example, human service agency clients who live independently and rely on public transportation to receive care can save governments as much as \$22,000 each year compared to the cost of supporting those individuals in institutional settings. While we can evaluate these impacts in quantitative terms, other values of human service transportation are more difficult to quantify, such as the ability of transit to enable citizens with limited mobility to live and maintain a good quality of life.

There are also ways to indirectly

estimate the economic impact of social service transportation to individual users. When public transportation is not available, people with limited options must rely on private taxi services to meet their most critical travel needs. Typical costs for taxi trips easily can exceed \$20. Rural and small town residents typically pay more per taxi trip than their urban counterparts because they often must travel longer distances to get services they need. Measured by their willingness to pay for crucial transportation, these costs represent one way of measuring transit's value to people with limited options. In these instances, public transportation clearly represents a good investment, even at the relatively high per trip costs associated with dial-a-ride services that are typically provided to transit-dependent citizens.

While there are no universal, comprehensive accounting procedures that absolutely determine whether or not increased availability and use of public transportation represents a 'good investment,' we must recognize substantial and increasing evidence from many sources that indicates significant benefits from expanding the role of public transportation. Based on this evidence, the Transit 2001 Commission has formulated a realizable vision and action agenda for public transportation that will move North Carolina into the 21st century.

**Expanding the travel options we have available across the state will be an increasingly important strategy in our effort to maintain the North Carolina quality of life and protect the character of our communities in the face of explosive growth.**



Transit 2001 Technical Report  
Chapter Five

# A New Vision for North Carolina

- **An exciting new vision of public transportation is emerging for North Carolina that includes: 1) expanding the types and variety of services available to meet particular travel needs; 2) introducing the latest technologies to provide new levels of comfort and convenience while reducing costs; and 3) engaging business and industry in new partnerships to plan, build, finance and operate 21st century services throughout the state.**
- **The new vision for transit also includes a wide range of initiatives designed to promote "transit-friendly" development and expand our choice of housing arrangements, enhance regional planning and decision-making and more effectively coordinate the activities of state, regional and local officials.**

## 5.1 Broadening our vision

The Transit 2001 vision extends far beyond public transportation. It embraces notions of how we want to live in the 21st Century and what we want our neighborhoods and communities to become. It reaffirms things we love about our way of life and North Carolina. The Transit 2001 vision is one in which we:

- Have more choices for housing arrangements and travel options;
- Target and tailor transportation investments to fully meet the mobility needs of all North Carolinians;
- Invest in transportation that best supports growth while maintaining the character of our communities;
- Invest in transportation that protects and preserves the environment that gives North Carolina its natural beauty and unique character;
- Measure the merits of transportation investments by their ability to serve the daily travel needs of all North Carolinians, rather than solely by their ability to serve projected vehicle traffic;
- Invest in transportation that protects and preserves existing highway capacity and past transportation investments;
- Ensure transportation costs and related impacts are manageable for future generations.

The Transit 2001 vision encourages us to build livable communities that ensure sustainable development and provide greater mobility options for current and future North Carolinians. It urges us to recognize that new transportation investment strategies in North Carolina must emphasize the availability and convenience of public transportation more than they have in the past.

### **Livable communities**

Livable communities first were popularized in the transportation industry by the Federal Transit Administration's Livable Communities Initiative. The initiative characterized livable communities by their renewed emphasis on:

- Accommodating pedestrians;
- Enhancing streetscapes;
- Creating visually attractive public spaces;
- Preserving natural areas;
- Restraining and restricting motor vehicles and traffic in heavily developed areas and activity centers; and
- Providing extensive, fully-integrated public transportation.

Figure 5A identifies more than 30 specific strategies by the Federal Transit Administration and Business Transportation Council to promote more livable communities.

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Figure 5A  
**Strategies to Promote More  
Livable Communities**

1. Use new technologies to improve the ease of fare payment.
2. Implement "mobility manager" technologies.
3. Promote development of alternative services by private/non-profit sectors.
4. Promote development of alternative services by transit authorities.
5. Encourage new brokerage roles for transit authorities.
6. Promote mobility alliances and networks.
7. Develop greater Transportation Demand Management (TDM) institutional capacity and resources.
8. Improve the coordination of public policy efforts.
9. Develop equitable, market-based incentives.
10. Encourage public involvement in planning for facilities and services.
11. Foster public participation in the evaluation of services.
12. Promote narrower street widths and slower design speeds.
13. Encourage on-street parking.
14. Enhance road crossings.
15. Enhance pedestrian space and amenities.
16. Strive to frame vistas and reinforce a "sense of place."

17. Design commercial streets to enhance economic vitality.
18. Create physical impediments to speeding.
19. Use psycho- perceptive illusions to slow traffic.
20. Overcome barriers to bicycle access (bridges, freeways, etc.)
21. Develop bikeways along rail corridors and greenways.
22. Promote bicycle-friendly facilities.
23. Improve connection of transit facilities to community.
24. Improve design of transit facilities.
25. Create management/maintenance entities for transit facilities.
26. Develop transit activity centers.
27. Promote transit- oriented land uses in immediate vicinity of stations.
28. Develop financial and tax incentives for Transit-Oriented Developments (TODs).
29. Develop new or modify existing transportation demand models.
30. Conduct surveys and develop databases.
31. Support growth management policies.

## **Sustainable development**

Sustainable development concepts arose when environmental interests began applying a conservation ethic to the process of urban and rural development. They involve two major principles: more efficient use of resources; and fulfillment of current needs without compromising

the ability to fulfill future needs. For transportation planning and decision-making, sustainable development primarily means reducing our dependence on personal vehicles to balance mobility needs with commitments to use less energy, improve air quality, preserve land and conserve limited resources.

Considering the enormous challenges that lie ahead, Transit 2001 Commission members and others who have participated in the Transit 2001 effort are united in their view that North Carolina should embark on an aggressive course of action that guarantees meaningful progress on all aspects of the Transit 2001 vision during the next decade and beyond. To do so requires a commitment, beginning now, to a dual, long-term public transportation development strategy that commits the state and local governments to:

- Invest in a new mix and expanded level of transit services; and
- Embrace a series of actions that are essential to ensure these new services reach their full potential in meeting the transportation needs of all North Carolinians.

## 5.2 The framework for 21st-century public transportation

Public transportation services across North Carolina have evolved slowly. They have been limited significantly by policy, resource and funding constraints. If we are committed to maintain personal mobility and our state's growth and prosperity, we must implement more aggressive strategies to expand the role and relevance of public transportation. This means we must increase the variety of available travel options, better tailor transportation services to meet specific travel markets and give greater consideration to the specific needs of local communities. To act on these commitments, the Transit 2001 recommendations focus on three fundamental areas:

- Rural and human service transportation;
- Urban and regional transit; and
- Intercity rail passenger service.

## **Rural general public and human service transportation**

In rural areas of North Carolina, general public transportation providers serve all area citizens, while human service transportation providers exclusively serve clients of human service agencies. There are 28 single-county or multi-county rural general public transit systems in North Carolina, and 55 human service transportation systems. Together they serve residents in all 100 North Carolina counties, as illustrated by Figures 5B and 5C. Although these systems and services vary considerably in scope, clientele and operating arrangements, they provide vital links for rural North Carolinians to basic services, daily needs and future opportunities.

The client base for rural general public and human service transportation systems predominantly consists of people who have limited or no access to personal vehicles and confront daily threats of isolation. These citizens are more likely than others to have critical mobility needs, such as medical, human service, educational and job-related needs, that pose immediate problems if they are not met. If left unresolved, these circumstances can create long-term and expensive burdens for individuals, families and the state. The Transit 2001 Commission recognizes the importance of meeting these needs and establishes a common mission and goals for future rural and human service transportation in North Carolina.



## **Rural and human service transportation mission and goals**

The mission of rural and human service transportation in North Carolina is to provide mobility to North Carolina citizens in rural areas to improve their access to jobs, medical and human services, educational and training opportunities, and social activities through coordinated, safe, effective and efficient public transportation systems.

### **Goals:**

1. Maintain the existing level of service in each of the state's 100 counties. Expand service to meet unsatisfied needs, nontraditional needs and increased demand for general public and human service transportation.
2. Maximize the efficiency and effectiveness of system operations through improved and expanded coordination activities of all modes of transportation -- including rural human service and general public transportation, urban transit, intercity bus and intercity rail passenger -- as well as through the use of existing and new technologies.
3. Increase public awareness of rural transportation options and benefits. Ensure that service and funding are provided with accountability to the public while developing a broad

base of public, private and political support for rural public transportation. Encourage the use of public and private partnerships for funding and operation of rural transportation services.

4. Establish a dedicated and dependable funding source for rural transportation.

In arriving at these goals, the Transit 2001 Commission gave particular attention to the predicted growth and changes in the client base for rural and human service transportation. Current and projected demographic data show substantial unsatisfied demand -- today and in the future -- for public transportation services in rural areas of North Carolina. The availability of adequate mobility options for rural residents will become increasingly critical to the well-being of our state's future generations as Governor Hunt's Smart Start and Work First programs are advanced.

### **Urban and regional transit**

Sixteen urban areas in North Carolina currently have urban transit service, and one metropolitan region, the Research Triangle, has regional transit service. Figure 5D shows the locations and relative extent of these transit systems. While the character and size of these areas and their transit systems vary, the Transit 2001 plan establishes an overarching mission and goals for urban

and regional future transit services.

## **Urban and regional transit mission and goals**

The mission of urban and regional transit services in North Carolina is to improve the mobility and quality of life for all citizens and the livability of urban and suburban communities, by providing efficient, safe, convenient and cost-effective public transportation that is an integral part of the overall transportation system.

Goals:

1. Reinforce and build on the services currently operating in the state's urban areas.
2. Develop new public transportation services and facilities.
3. Recognize and respond to the changing needs for non-traditional transit services in metropolitan regions.
4. Provide adequate financial resources to carry out the goals and objectives of urban and regional transit.
5. Improve the institutional options for transit service delivery.
6. Develop transit policies and programs and encourage local land-use policies that support livable communities.

In framing these goals for urban and regional transit, the Transit 2001 Commission anticipates significant

expansion of traditional urban bus transit in all 16 urban areas of the state to ensure that basic transportation options are available on an area-wide basis. In the Charlotte, Piedmont Triad and Research Triangle metropolitan regions, the Transit 2001 Commission recommends introduction of regional fixed- guideway transit services, such as regional rail or busways, to complement regional bus transit and relieve traffic congestion in major transportation corridors where highway expansion options already are limited.

For all urban areas and metropolitan regions in the state, the Transit 2001 Commission encourages communities to implement a variety of innovative transit services and facilities. The Commission also urges communities to cooperatively form new regional partnerships to expand the nature, scope, use, relevance and efficiency of transit and introduce new, demonstrated technologies to enhance passenger convenience and reduce costs. Lastly, the Transit 2001 Commission calls for a variety of actions to strengthen local and state abilities to more effectively link regional transportation investment decisions with regional land use and development decisions.

### **Intercity rail passenger service goals**

The success of recently expanded intercity rail passenger service in North Carolina indicates the need and demand

for high- speed service in existing corridors and new service in other corridors throughout the state. Expanded intercity rail passenger service is important to:

- Relieve burgeoning traffic congestion in major highway corridors around and between North Carolina's metropolitan regions,
- Provide travel times that are competitive with other competing modes of transportation; and
- Provide an affordable and enjoyable travel option to serve the coastal and mountain areas of the state, and link these areas to other travel destinations around the country.

These goals are ambitious, but they also are achievable. The Transit 2001 Commission recognizes the importance of intercity rail passenger service for North Carolina and strongly supports the aggressive efforts currently underway to expand service.

- The Transit 2001 Commission's recommendations for intercity rail passenger service include:
- Introduce two- hour rail passenger service between Charlotte and Raleigh. Connection of this service to the Northeast Corridor through Richmond, Virginia will significantly increase its economic sufficiency and potential for public-private partnership.

- Preparation of an eastern North Carolina rail passenger plan. Candidate proposals for study include, but are not limited to, Charlotte- Wilmington, Morehead City- Goldsboro- Raleigh, Wilmington- Fayetteville- Raleigh, Greenville- Wilson- Raleigh, Elizabeth City- Norfolk commuter service and Raleigh- Roanoke Rapids- Hampton Roads, Va. service.
- Restore western North Carolina rail passenger service with daily round trips between Asheville, Hickory, Salisbury, Greensboro and Raleigh.
- Provide a source of funding for preserving endangered rail corridors that can be accessed and used relatively quickly when a railroad company decides to dispose of a corridor. Corridors should be preserved for future freight, commuter and high speed rail uses.

## 5.3 Supportive policies are crucial to Transit 2001

Investment in physical facilities and services and the commitment to operate and maintain a new, expanded array of public transportation options do not, by themselves, guarantee that transit will achieve its full potential. The transportation challenges confronting North Carolinians and residents of other rapidly growing states require new strategies and approaches in many critical areas in addition to innovative transit service.

Another way to make this point is to suggest that even the most exciting, innovative and economical transit service imaginable can be undercut severely by independently crafted public policies that act to discourage development and use of alternative transportation modes. The limited role of public transportation in North Carolina today largely results from inadequate policies and practices, especially land use development ordinances, outside the public transportation arena which diminish transit's role, relevance and effectiveness.

To the extent that state and local governmental policies directly or indirectly discourage use of public transportation, the future role and relevance of new transit services will be diminished. To the extent that public policies encourage or facilitate increased transit use, transit investments will be much more effective in meeting travel demand and supporting broader local and state economic and development goals.

For transit to achieve its full potential and for the state and local communities to benefit most from future transit investments, mutually reinforcing policies must be in place in several key areas. Among the most important of these are:

- Policies, strategies and actions that focus on managing and shaping the demand for transportation services; and
- Policies, strategies and actions that improve the governance process by which we make transit, transportation and other public decisions.

## **Shaping travel demand and travel behavior**

It is critical that we become more attentive to factors affecting travel demands and patterns. To understand the importance of better travel demand management, consider the situation that has confronted road building through the



years: highway construction rarely has kept pace with growth in travel, and most new highways that are projected to meet needs for 20 years are overrun with traffic in far shorter time periods.

The lesson is clear. Efforts to accommodate growing travel demand by adding only to the supply of services without managing travel demand are doomed to fail -- failure accompanied by increasing costs and unacceptable consequences for travelers and overall communities. Effective travel demand management can provide the tools and opportunity to shape communities in ways that increase choices for housing arrangements and travel and enhance neighborhood character, quality of life and sense of place. Two of the most important factors influencing travel demand are the configuration of land use and development and the perceived cost of transit compared to competing travel options.

### **Land use, development and planning for growth.**

Our uses for land and development directly affect the nature and scope of our travel requirements. Sprawling suburban developments typically include attributes that force residents to rely exclusively on personal vehicles for transportation. These developments limit the usefulness and attractiveness of public transportation, walking or bicycling. In North Carolina and other states,

communities are introducing transit-friendly neighborhoods that once again offer more choice in types of housing, better access to neighborhood commercial and recreational activities, and more practical, diverse travel options, including various modes of transit.

Some communities have developed specific guidelines that show how new developments of all sorts and sizes can be better served by public transportation. For these communities, transit becomes essential in the mix of supportive public services, and new developments result in expanded use and relevance of transit. Transit-friendly communities also enjoy more varied and open landscape, preserve sensitive environments and maintain more cost-effective public services. The interrelationship of land use and transportation is fundamental. It is crucial for state government, regional planning agencies and local communities in North Carolina to reevaluate and reintroduce land use issues and their relationship to transportation into transportation planning and investment processes at all levels.

To underscore the importance of the interrelationship between transportation and land use, the Transit 2001 Commission recommends a set of principles to guide state, regional and local policy making, planning and decision making for land use development and transportation

investment:

1. Because land use patterns and transportation networks shape each other, a highly coordinated and consistent approach is needed to assure that continued growth and development will not reduce the livability and threaten the character of North Carolina's communities.
2. Providing options to current land use patterns is essential to assure that the livability of our communities can be enhanced, economic growth can be sustained, public infrastructure costs can be managed and the capacity of our streets and highway system can be preserved.
3. Transit and other options to single-occupant vehicle use must be among the choices available in meeting future travel demand.
4. Livable communities should be planned, designed and built to support increased transit use, walking and bicycling.
5. To assure the efficiency of the region's street and highway system and protect available capacity, increased transit, walking and bicycle options should be made available.
6. To achieve these results, closer cooperation in transportation planning and decision making will be needed between local, regional and state decision makers and

agencies while respecting the unique responsibilities of each:

- A.** Local agencies will maintain primary responsibility for land use regulation and decision making.
- B.** Regional agencies will support greater consistency in development planning, analysis, regulation and service delivery.
- C.** The state will evaluate combining public transit and highway planning functions and provide a framework in terms of goals, objectives and principles, as well as technical assistance.
- D.** Each will share responsibility for funding and assuring an appropriate balance in transportation investment.

### **Transportation pricing.**

Transportation costs often have a major affect on our travel decisions.

Economists theorize that if society could recover the total costs of the automobile from users, we would change our travel behavior drastically. In addition to expenses for fuel, maintenance, insurance and depreciation, motor vehicle use also includes substantial hidden costs, such as air quality and health care, that we never pay directly. Governments and society significantly subsidize these costs. The total government subsidy for motor vehicle use is estimated to far exceed the cost of public transportation. Moreover, increased availability and use of public

transportation tends to mitigate government's cost for motor vehicle use by reducing numbers of trips, linking trips together and promoting ridesharing.

Mechanisms for transportation pricing already exist that we can use more effectively to achieve two major objectives: 1) to recover more of the cost of personal vehicle use, particularly single-occupant vehicle use, with a goal to reduce or at least moderate growth in personal vehicle-miles traveled; and 2) to raise new revenues for increased investment in public transportation and other high-occupancy transportation modes. Pricing and revenue raising options and related recommendations are discussed in Chapter 7.

### **Transportation governance**

Public transportation services in North Carolina traditionally have been the responsibility of municipal and county governments that provide services mostly within boundaries of their respective jurisdictions. Crucial issues associated with our state's population growth and economic development, however, transcended government boundaries long ago. This is particularly true for our travel patterns. North Carolinians travel daily across and between entire metropolitan regions to work, shop, recreate and pursue other personal needs. Many of the traditional processes and institutional structures we use to guide and govern transportation -- particularly

public transportation -- are fundamentally mismatched with the nature and scope of today's travel markets. Multiple municipal transit systems in one metropolitan region that provide separate, limited services over limited geographic areas find it increasingly difficult to address the travel demands of suburban residents who are largely oblivious to municipal boundaries.

Planning functions and processes used to provide for continued growth and development confront many of these same challenges. As is true elsewhere in the nation, the cumulative effects of individual, locally controlled planning and development decisions do not necessarily produce the most desirable results for a multi-county region over the long term. The missing factor -- that is much more absent in North Carolina than in many other states -- is effective, coordinated regional planning, analysis and decision making. North Carolina regions also lack a consistent framework to integrate critical decisions made at the state level -- such as transportation investments, facility investments, environmental regulations or economic development policies -- with decisions exercised at the local or regional level, such as land use, development and provision of public services like public transportation.

The Transit 2001 Commission recognizes this frailty in our governance

structure, intergovernmental relationships and responsibilities -- and recommends significantly increased efforts by state government, local communities and regional agencies in North Carolina to:

1. Strengthen regional planning, coordination and service delivery in practical and effective ways, particularly with respect to land use and transportation investment -- including regional management and decision making for transit planning and operations;
2. Enhance the capacity of municipal and county governments to address issues arising in the transportation/land use relationship and issues arising in the effort to approach transportation decision-making on a more multimodal basis;
3. Improve coordination and processes within state government to ensure that policies at the state level mutually reinforce and complement each other; and
4. Combine transportation planning activities at the state level.

**The opportunity clearly exists to introduce a new generation of systems, services, facilities and intergovernmental arrangements at this critical juncture in our state's development.**

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Chapter Six

## What It Takes to Get There

- **Our commitment to increase transportation options and provide more and better services involves actions necessary to: 1) Serve the 40 percent of rural and human service trips that currently are not being served; 2) Capture an increasing share of urban and regional travel through expanded and enhanced bus services, ridesharing and introduction of regional rail systems in the largest of our metropolitan regions; and 3) Extend and enhance intercity rail passenger service throughout the state while introducing high-speed service in the emerging Southeast Corridor between Washington, D.C. and Atlanta, Georgia.**
- **The Transit 2001 recommendations are practical and achievable, and they allow flexibility for local officials to fashion transit development plans**



**and investment programs to suit local needs and circumstances.**

- **Transit investment should be increased from \$108 million annually to \$265 million, and the state share should be increased from \$20 million to \$95 million in the near term. In addition, local units of government must identify increased funding to support their transit operations.**
- **New levels of quality, comfort, reliability and convenience will be achieved through investments in technology, new service designs and partnerships with business and industry.**

## 6.1 Expanding the availability and relevance of transit: seamless public transportation for North Carolina

North Carolina's current public transportation services operate efficiently and provide good value for our investment. The scope and scale of existing services, however, are far below levels needed to attract a growing share of the travel market. Despite efforts by the state in recent years to increase funding for public transportation, currently committed resources do not enable any significant expansion of service. In many communities and

regions, current service is inadequate to support expanded growth and development goals now being introduced in local and regional plans such as "Building a Livable Future: The Durham 2020 Comprehensive Plan" or Raleigh's "Future Neighborhoods Group."

Inadequate funding increasingly threatens the viability of existing public transportation and undermines its relevance to most North Carolinians. If current funding arrangements continue during this period of growth, our highway network will face enormous added pressure, and deteriorating travel conditions could threaten economic progress. These effects will be felt most acutely in North Carolina's major metropolitan regions -- major catalysts for our state's economic growth -- where unacceptable travel conditions already cause serious delays in some cities.

Based on experience in other states, there is compelling evidence showing that economic growth can, indeed, come to a halt in the face of congestion and its corollaries, declining mobility, inadequate mobility for workers and goods, and diminished quality of life. To avoid this risk, North Carolina must pursue a transportation agenda that expands available transportation options and provides communities with opportunities and incentives to balance transportation investments among modes in support of more desirable development patterns.

## **Building a seamless transportation network**

Remaining sections of this chapter discuss the Transit 2001 Commission's recommendations for an expanded network of public transportation in North Carolina. Although the recommendations are grouped by geographic scope -- rural, urban or intercity -- it is important to view these proposals as elements of a single, fully integrated, "seamless" transportation network. Rural and human service systems are linked to urban and regional transit systems and intercity rail and bus services; urban and regional transit systems interconnect with intercity rail and bus services. The expanded array of transit and transportation choices also is integrated with the highway system and local street networks.

The interconnection and coordination of transportation services and facilities must occur at many levels:

- Actual physical connections between transit services will be introduced or expanded through development of new terminals, stations and intermodal transfer facilities;
- Operation of transit and transportation services and facilities will be coordinated in a variety of ways to enhance convenience for customers, including integrated fare

- systems, routes and schedules;
- Administrative, management and funding integration will be advanced to reduce costs and improve efficiency through cooperative, multimodal planning, marketing, procurement and funding strategies; and
- Transit services will be integrated physically, functionally and administratively with streets and highways through expanded availability and use of park- and-ride facilities, high- occupancy- vehicle lanes, traffic control systems and other intelligent transportation systems (ITS), technologies that mutually benefit transit and highway users.

The Transit 2001 recommendations do not represent extraordinary leaps to an unrealistic transportation future. The recommendations are practical steps to provide effective, efficient and balanced public transportation for North Carolina to support economic growth and development, maintain the character of our communities, improve the quality of our lives and preserve our unique "North Carolina" style of living. The Transit 2001 vision gives North Carolina the transportation tools to be an economic leader in the 21st century.

## **Improving and expanding rural and human service transportation**

The availability of reliable public transportation services is essential for economic growth and development in rural areas. More importantly, however, public transportation ensures that rural residents without access to personal vehicles, including elderly citizens or people with disabilities, have dependable transportation options to meet basic personal needs, including access to jobs and job training, education, medical care and human services, shopping and recreation.

Investment in rural and human service transportation also helps human service agencies become more effective and efficient. Improved mobility for rural residents also helps preserve the special character of rural communities, goals that are as important to rural citizens as they are to urban citizens. As is true in some other states, parallel and overlapping state and federal programs, agency responsibilities, operating policies, funding and client bases complicate rural public transportation investments and operations in North Carolina.

Accordingly, the Transit 2001 Commission's recommendations focus on legislative, regulatory or administrative actions that could streamline and expand current levels of service.

Many recommendations stem from analyses summarized by the "Human Service Transportation Needs Assessment, Final Report," compiled by SG Associates for NCDOT in July 1996,

which show that 2.8 million North Carolinians, or 42.2 percent of our state's 1990 population, were eligible in that year to request human service transportation. The study also found that, of these citizens:

- 33.6 percent were elderly with incomes above the poverty level, while 6.4 percent were elderly with incomes below the poverty level;
- 3.9 percent were elderly with limited mobility and incomes below the poverty level, and 5 percent were elderly with limited mobility and incomes above the poverty level;
- 4.2 percent were people with disabilities; and
- 34.8 percent had incomes below the poverty level, and 22.1 percent had incomes between 100 percent and 150 percent of the poverty level.

Based on these figures, there is demand for nearly 10 million human service related trips each year in North Carolina. Currently, however, transportation services provide only six million trips per year. Existing services fail to meet nearly 40 percent of the current demand for human service transportation -- nearly 4 million trips every year. These statistics represent thousands of underserved, rural residents who continue to be isolated from critical services, friends, families and their communities. Figure 6A summarizes these estimates of unserved travel demand.

The Transit 2001 Commission recognizes this inadequacy and recommends comprehensive actions to ensure transportation services for currently unmet rural and human service transportation needs. These recommendations address two fundamental objectives: 1) to maintain and maximize use of existing services; and 2) to expand current services to accommodate unmet needs. Key actions to help meet these objectives include:

**1. Make capital investments to maintain and maximize current services:**

- Replace the 1,400-vehicle fleet every 100,000 miles or five years;
- Replace or improve one fleet maintenance facility each year;
- Replace worn equipment and spare parts, and provide two-way radio systems for all vehicles;
- Upgrade computer capabilities for more efficient scheduling, real-time dispatching, automatic vehicle location (AVL), global positioning systems (GPS), mobile displays, billing and accounting services.

**2. Make capital investments to expand current services:**

- Provide 200 new vehicles, 40 per year for five years;
- Replace new vehicle fleet every 100,000 miles or five years;
- Identify sites and fund construction,

or lease agreements, for new fleet maintenance facilities.

**3.** Increase operating assistance to support expansion of rural general public and human service transportation.

**4.** Improve operations and administration:

- Update county Transportation Development Plans (TDPs) every four years;
- Provide administrative assistance to coordinated transportation providers;
- Foster better coordination between agencies of the state Department of Human Resources (NCDHR) and local transportation providers;
- Establish and support transportation coordinator positions in counties where they do not exist;
- Test new service options:
  - a.** Increase multicounty coordination and delivery of services;
  - b.** Expand intercity service using existing rural public transportation systems and intercity bus services;
  - c.** Coordinate rural trips to and from regional medical centers;
  - d.** Establish "ride- along" programs to give general public riders access to regularly scheduled human service trips;
  - e.** Use previously under-utilized vehicles to provide dial-a-ride, connecting or flexible transportation



services to link key trip origins and destinations;

- f.** Establish a single point of contact, coordinate out-of-county service and provide information material in multi-county/multi-county jurisdictional areas; and
- g.** Develop comprehensive, coordinated marketing and customer information materials at county levels.
- Combine locations of related, local governmental agencies, human services and commercial businesses.

## **Community transportation systems**

Transportation needs of our state's rural residents continue to expand. Initiation of new programs such as Work First, North Carolina's welfare reform initiative, result in unique challenges for rural transportation systems. To meet these needs, the NCDOT Public Transportation Division helps local systems become true "community transportation systems" capable of providing services beyond their typical operating hours and service areas. In the future, local systems should use the brokerage concept to provide citizens with additional mobility options beyond standard public transportation services.

## **Intercity bus service**

Transportation links between North Carolina's urban areas, small towns and

rural communities are important to enhance our statewide mobility and access to opportunity. The state, however, provides only marginal support for intercity bus services that are vital links for many citizens.

The Transit 2001 Commission recommends that rural public transportation systems provide feeder services to existing intercity bus routes. This will greatly expand travel options for many rural residents and solidify rural North Carolina's link to the remainder of the state. The Commission also recommends that the state should continue providing operating assistance to intercity bus systems for routes in areas without other travel options that otherwise would be discontinued.

### **Improving and expanding urban and regional transit**

Urban areas of North Carolina, particularly the three major metropolitan regions, pose the greatest challenges with respect to maintaining mobility, assuring access and protecting the long-term viability of the existing transportation network in future years. Current transit service for our state's urban and suburban residents is very limited. To plan future transit expansion, the Transit 2001 Commission examined alternate service levels defined by the number of bus hours to be provided per capita for all of North Carolina's 16 urban areas. Figure 6B illustrates these alternative service

levels.

Thresholds for each alternative level represent typical service levels in areas where transit is available more widely and is used more frequently. For comparison, the thresholds represent levels of service that urban and regional transit systems in other states currently provide. Levels of service implied by the thresholds in Figure 6B are realistic and achievable. They do not represent overly optimistic or unrealizable views of public transportation for North Carolina's future.

To determine the broad impacts of alternative levels of service on transit ridership and travel demand, each service level was evaluated using a series of basic assumptions.

### **Urban ridership and market share**

Future urban population forecasts for the state were multiplied by the annual bus hours per capita for each alternative service level to estimate the number of urban bus hours available in future years.

For each alternative, annual bus hour estimates then were multiplied by the expected passengers per hour the services might be expected to accommodate.<sup>(9)</sup>

The number of annual transit trips estimated from this procedure then was compared to projected levels of overall future trip making in the state's urban areas to determine what share of the future travel market is expected to be served by each of the alternatives.

This simple comparison helps assess the extent of transit service needed to meet growing travel demand in North Carolina's urban areas and metropolitan regions. It also helps determine the overall levels of urban and regional transit service that would be most consistent with the Transit 2001 vision. Figure 6C summarizes the expected ridership and market share of travel that each urban or regional alternative level of service would accommodate.<sup>(10)</sup> The most significant finding from this comparison shows that only "optimal" levels of service will allow transit to attract an increasing share of the growing travel market in the future. While each alternative results in increased market share in the short term, transit's relevance in the broader travel market continues to decline over the long term except in the case of the "optimal" scenario. Substantial growth in urban population and attendant trip making expected through 2020 overwhelms all but the optimally sized transit services.

### **Assessing broader benefits of alternative service levels**

Based on estimates of transit ridership and market share, the Transit 2001 Commission evaluated the broader effects and consequences of each alternative in qualitative terms. It examined alternatives and discussed their impacts in terms of several critical factors, including transit's ability to:

- Offer a higher frequency and quality of service;
- Attract increased ridership;
- Attract increased market share;
- Provide greater service coverage;
- Maintain capital assets;
- Reduce maintenance costs;
- Appeal to different markets;
- Attract "choice" riders or new markets;
- Respond to growth, external factors and opportunities;
- Support or address broader community goals and problems;
- Provide viable travel options for residents and businesses;
- Invite meaningful opportunities for partnership;
- Foster public support and build a transit constituency;
- Improve cost/revenue, productivity and cost-effectiveness;
- Support broader management objectives; and
- Support innovative service delivery.

Taken together, these factors assess some of the impacts of transportation investment decisions that traditional engineering studies do not incorporate. The factors also represent dimensions that are critical to assessing the effectiveness of transportation investments for improved communities and quality of life.

Figure 6D provides a brief summary of the Transit 2001 Commission's

conclusions following evaluation of the broader consequences of each urban and regional transit alternative under consideration.

## **Urban and regional transit recommendations**

Review of alternative service levels for urban and regional transit lead the Transit 2001 Commission to endorse the "optimal" level as a goal for North Carolina. The "optimal" service level best meets critical transportation needs for future economic growth and development. "Optimal levels" could enable urban and regional transit systems to more than double current market share and attract even more riders as travel demand grows.<sup>(11)</sup> "Optimal" service also introduces better transportation choices that preserve the character of our communities and quality of life in urban areas.

Circumstances and conditions vary greatly, however, among the urban areas and metropolitan regions in North Carolina. There are particular distinctions between current and projected conditions in the three major metropolitan regions -- Charlotte, the Piedmont Triad and the Research Triangle -- and smaller urban areas of the state. The scope and character of transit services among smaller urban areas also vary considerably.

In forming its recommendations for urban and regional transit, the

Commission strongly feels that urban areas outside the three major metropolitan regions should not be expected to establish "optimal" levels of service on the same timetable as the major metropolitan regions if local leaders feel it is inappropriate to do so. Therefore, the Commission establishes a tiered set of recommendations for state action in support of expanded urban and regional transit:

For the Charlotte and Research Triangle metropolitan regions, commitments should be made now to devote resources and support to innovatively expand transit service to "optimal" levels by 2010.<sup>(12)</sup> "Optimal" transit service levels for Charlotte and the Research Triangle include a 45 percent increase in per capita bus hours and the introduction of regional rail service in both regions. With "optimal" service, ridership could increase by nearly three times from 1997 to 2010. Implementation of regional rail or busways for these regions by 2002 is intended to accommodate growth in travel demand in major highway corridors where highway expansion is not feasible or desirable.

The Piedmont Triad metropolitan region should begin to pursue the "better" level of bus transit service, as defined in the Commission's analysis, and begin to develop initial phases of regional rail or busways by 2010. The "better" service level recommends a 70

percent increase in per-capita bus-hours for High Point and Greensboro; and a 44 percent increase in per-capita bus-hours for Winston-Salem. With "better" service, ridership is expected to increase by nearly two and one-half times by 2010.

Asheville, Fayetteville and Wilmington should continue expanding transit services to reach "modest" levels. Current per-capita bus hours in these areas must increase substantially to meet required 0.5 bus hours for "modest" service.

Gastonia, Greenville, Hickory, Rocky Mount, Salisbury and Wilson should work toward the "modest" service level. Although these areas are recommended to increase per-capita bus hours of service between 30 percent and 80 percent, they still would fall short of the "modest" level of service defined by the Commission.

Burlington, Goldsboro, Jacksonville and Kannapolis could begin implementing new transit services by 2010, depending on local circumstances.

In addition to expanding transit services, North Carolina's urban areas and metropolitan regions are expected to expand ridesharing services. All 16 urban areas have opportunities to introduce or expand a variety of ridesharing programs like carpools, vanpools and employer based transportation services. Ridesharing programs operating in the state's three major metropolitan regions



transport a significant number of commuters and eliminate nearly 30 million miles of travel by single occupant vehicles each year.

The commitment to act on these recommendations and to carry them forward would have several important consequences:

- Single occupant vehicle trips would be reduced;
- Transportation costs for individuals and households would be reduced;
- Levels of motor vehicle emissions would be lowered;
- Levels of energy use and energy costs for consumers and industries would be lowered;
- Safety for the traveling public would increase and costs associated with vehicle collisions would be lowered for consumers, businesses and government;
- Individuals and households would have more options for meeting transportation needs;
- Business and industry would have improved access to labor markets;
- Traffic congestion and delays in key transportation corridors during critical times of the day would be reduced, saving time and money for people, businesses, industry and government;
- The capacity of existing streets and highways would be maintained for longer periods of time, and the need

for costly highway projects would be reduced; and

- Efforts to introduce new development patterns and more-efficient housing arrangements would be enhanced with significant reductions in long term public service expenses and infrastructure costs.

### **Improving and expanding intercity rail passenger service**

The master planning program directed by the North Carolina Rail Council and the Rail Sub-Committee of the state Board of Transportation includes an analysis of the planned introduction of high-speed rail passenger service in North Carolina to link Charlotte and Raleigh. The plan also examines the feasibility and future role of rail passenger service for other corridors in the state as well as the connection of North Carolina to high-speed rail planned for the Northeast Corridor via Richmond, Va. and the Southeast via Atlanta, Ga. Expansion of rail passenger service to an eventual intrastate network gives an exciting, high profile backbone for the overall, statewide, public transportation network envisioned by Transit 2001.

The Transit 2001 Commission has reviewed current planning efforts for rail passenger service and endorses the proposals highlighted below.

### **Piedmont high- speed rail corridor**

This corridor -- connecting Charlotte, Greensboro and Raleigh -- is part of the federally designated Southeast High-Speed Corridor between Washington, D.C. and Charlotte. It is one of seven national high-speed rail corridors designated under ISTEA. The NCDOT Rail Division applied for and received funding under Section 1036 of ISTEA from the Federal Railroad Administration to conduct master planning for high-speed rail passenger service. The master planning elements make up a feasibility study designed to result in primary decision making. These planning elements include:

- Environmental engineering;
- Environmental screening;
- Demand modeling;
- Economic impact and transportation benefits analyses;
- Commercial feasibility;
- Benefit cost and risk analyses;
- Analysis of financial alternatives;
- and
- Train performance and train dispatch simulation.

Based on the goals and progress of North Carolina's rail passenger plans, the Transit 2001 Commission recommends that the state immediately make additional annual investments to complete planning for high-speed rail and to begin capital improvements to current facilities, such as passenger train stations, infrastructure improvements and

rolling stock, that are necessary to implement high- speed service.

### **Southeast Rail Corridor Coalition**

North Carolina serves as the lead state to coordinate development of high-speed rail passenger service in the Southeast. The planned Southeast Corridor will link North Carolina to the Southeast via Atlanta, Ga. and to the Northeast Corridor via Richmond, Va. The coalition will seek future federal funding on high- speed rail passenger service similar to existing service in the Northeast corridor that has developed during the past two decades.

### **Western North Carolina rail passenger service**

Recent rail studies have examined several alternative plans to expand rail passenger service to Hickory, Asheville and western North Carolina. These analyses propose new service connecting Raleigh to Asheville, via Salisbury and Hickory. The Transit 2001 Commission recommends that the state proceed with plans to implement this proposal.

### **Eastern North Carolina rail passenger service**

Future rail passenger service through eastern North Carolina has not been analyzed. There is, however, interest in examining the extension of Charlotte - Raleigh- Washington, D.C. service to the eastern part of the state, possibly

including service from Charlotte to Wilmington. The Transit 2001 Commission recommends that the state initiate this study, similar to studies performed for western North Carolina. The study should develop proposals to integrate service to eastern North Carolina within the state's Intrastate Rail Passenger Service Plan.

Notes:

9. Passenger per hour figures used in the analysis were: 31 passengers per hour (current); 30-35 passengers per hour in 2000; 35-40 passengers per hour in 2010 for "Better" alternative; 40+ passengers per hour in 2020 for "Optimal" alternative. These values reflect the current experiences of North Carolina urban transit systems, are wholly consistent with the experiences of transit systems in other areas of the country, and in fact, are somewhat conservative. As indicated, passenger per hour figures are expected to increase as transit service levels and intensity increase, a relationship that has been documented in a recent analysis of transit ridership trends among systems experiencing the most significant recent ridership increases.

10. Important "demand responsive" (DR) transit services are provided in all urban areas to serve disabled persons and to meet service requirements of the federal Americans With Disabilities Act of 1991. These services typically involve specially equipped vans dispatched to clients' homes or destinations to provide for a variety of travel needs. The estimating procedures and values summarized include service and utilization levels for these DR services in urban areas across North Carolina.

11. Estimates of the market share of travel by

transit are for a 24-hour period. A more meaningful expression of market share for urban travel is the percent of trips on transit during peak hours in major travel corridors. It is during these conditions that transit provides a critical addition to the capacity of existing streets and highways and where expansion of the highway network may not be possible or prudent. In these conditions, transit market shares can reach 20 to 30 percent or more, and effectively substitute for hundreds of millions of dollars of highway improvements that would otherwise be required to accommodate transit users in private vehicles.

12. In the three metropolitan regions of North Carolina, it was assumed that approximately one-half of the estimated increase in bus transit trips under the "Optimal" scenario would be accommodated on regional rail services. This projected regional rail trip base was used along with data on system size, utilization, operation and cost from other rail systems across the country, including Portland, Ore. and Sacramento, Calif. to estimate the extent of the regional rail systems that would be required in each metropolitan region of North Carolina, and the associated investment requirements.

## 6.2 Investment requirements and cost-sharing principles

The Transit 2001 recommendations call for expansion of public transportation in North Carolina to support continuing population growth, economic prosperity and preservation of our way of life. The plan also recommends the role North Carolina state government must play in public transportation to meet these goals.

Relative to current levels of service, these recommendations may seem ambitious. When we compare North Carolina's public transportation with the plans and existing services for transit in other competing states, however, the Transit 2001 recommendations are sound and conservative. The Transit 2001 Commission firmly believes that North Carolina must embark on an aggressive, expanded and sustained program of public transportation investment and improvement to effectively serve our state's future growth and development in ways that support continuing prosperity and a high quality of life.

The Commission has developed estimates of the investments needed to successfully implement the Transit 2001 recommendations, as well as principles to guide the state's role and participation in future transit funding.

## **Summary of investment requirements**

Public transportation investments in North Carolina, from all sources, total \$108.4 million annually. Of this investment, the state provides about \$20 million or slightly less than 20 percent.

During the next ten years, the Transit 2001 Commission recommends more than doubling the current investments in public transportation from all sources to \$265.4 million annually. Of the recommended amount of investment, the state would contribute \$95.2 million per year. Local communities also would increase contributions. The new level of investment represents nearly two and one-half times the current amount of total public transportation investments and nearly a five-fold increase in state funding. Figure 6F summarizes the current and projected investment levels.

The recommended annual investment levels are driven by the Commission's recommendations on service objectives as well as principles endorsed by the Commission indicating how federal, state and local governments and transit riders should share funding responsibilities for future public transportation investments



in North Carolina. Remaining sections of this chapter summarize these cost sharing principles and their relationship to the components of the Transit 2001 recommendations.

### **Investment requirements for rural general public and human service transportation**

The Transit 2001 Commission estimated investment requirements for rural and human service transportation in North Carolina based on goals for meeting currently unmet demand in rural communities throughout the state. The estimates include projected capital, operating and administrative support both for maintaining current service levels and expanding services. In addition, the investment requirements have been disaggregated for services currently supported by NCDOT funds or NCDHR funds. Estimates for state investments needed to fund recommended rural general public and human service transportation in North Carolina are based on the principles and assumptions noted in Figure 6G.

### **Cost sharing for rural general public and human service transportation**

For capital, operating and administrative support for rural public transportation, the Transit 2001 Commission recommends that:

- Capital investment be funded with 70 percent federal funds, 20 percent state funds, and 10 percent local funds.
- General public operations be funded with 80 percent state funds and 20 percent local funds.
- Human service operations be funded with 100 percent funds from the state Department of Human Resources.
- Administration be funded with 85 percent federal and state funds, and 15 percent local funds.

### **Investment requirements for urban and regional transit**

Implementation of the recommendations for urban and regional transit is expected to occur over the next 10 years. While the Commission broadly endorses "optimal" service levels for all urban and regional transit systems for the long term, the Transit 2001 action agenda recognizes the varying scope and condition of urban and regional transit systems throughout the state. Investment requirements in Figure 6H reflect estimates and projections for realistically expanding transit services in specific urban areas and metropolitan regions. The basis for these estimates and projections are summarized below.

Transit for the Charlotte and Research Triangle metropolitan regions is projected to reach "optimal" service levels by 2010. For both regions, service

is expected to include expanded mixes of fixed-route and dial-a-ride service, regional rail service, regional bus service and vanpool/carpool programs.

"Optimal" service levels will require intensified service with 15-minute to 20-minute headways during peak commuting hours, 30 to 45 minutes for other times, and expanded operations for urban centers and the development of suburban hub operations.

Transit for the Piedmont Triad metropolitan region is expected to reach the "better" service level by 2010. Transit services should include a less- intense mix of the same transit modes recommended for Charlotte and the Research Triangle.

In each of the three major metropolitan regions, initial phases of regional rail service or a busway system are expected to be constructed over a four- year period and to be opened for operation in 2003, 2004 and 2006. Major intermodal terminals are anticipated to be built in Raleigh, Durham and Greensboro and a new train station is anticipated in Charlotte.

Transit systems in Asheville, Fayetteville and Wilmington are expected, as a whole, to reach "modest" service levels by 2010. Transit should include fixed- route and dial- a- ride services for all areas and possibly vanpool or carpool programs. A major transfer hub is proposed for Wilmington and an intermodal terminal is proposed

for Fayetteville.

Transit systems in Gastonia, Greenville, Hickory, Rocky Mount, Salisbury and Wilson are expected, as a whole, to improve and expand current services to just below "Modest" service levels by 2010. Transit for these areas should be similar to that of Asheville, Fayetteville and Wilmington, but at a lower intensity. Transfer hubs are proposed for Greenville and Hickory.

Burlington, Goldsboro, Jacksonville and Kannapolis could initiate transit services by 2010 to provide a limited combination of fixed- route and dial-a-ride services. Transfer hubs are also anticipated in three of these areas.

In addition to these broad characterizations of future transit service and facilities in the state's urban areas and metropolitan regions, a number of related improvements are included in the proposed service concepts and projected costs have been incorporated with the estimated regional investment requirements:

- Between \$1 million and \$2 million would be provided to develop park-and- ride lots to facilitate access to regional bus, ridesharing and regional rail services;
- Nearly \$170,000 per year would provide passenger amenities such as shelters, benches and other facilities to enhance the attractiveness and comfort of expanded transit

services;

- More than \$400,000 per year would be provided to develop and implement new information technologies, like kiosks and interactive video terminals that could be located at strategic sites to provide real-time schedule information for passengers;
- Between \$2 and \$3 million per year would expand electronic and communications technologies, like registering fare boxes, computer equipment, Automatic Vehicle Locator (AVL) systems and computer- assisted dispatching software to increase the responsiveness of transit systems to travel- market needs.

Detailed tables contained in Appendix C highlight several aspects of projected urban and regional transit investment requirements, including the following: 1) breakdowns of investments by year for routine capital and operating expenditures; 2) capital and operating expenditures for new regional rail development; 3) service characteristics and expenditure estimates for each described group of urban areas; 4) proposed expenditures for support facilities and equipment for the entire, statewide urban transit network; and 5) anticipated federal, state and local shares of projected investment for the next 10 years.

The Transit 2001 Commission has established these general cost sharing principles and assumptions about how federal, state and local government should share funding responsibilities for future public transportation investments:

- Federal capital assistance will continue at reduced levels;
- Federal operating assistance will continue at reduced levels in the short- term;
- Farebox goals and policies will be set by local and regional officials;
- For routine urban transit capital investments, the state, in combination with federal funding, generally will provide 80 percent of capital costs;
- For operations, the state generally will provide assistance equal to the amount of local assistance, rising to 50 percent of the net operating deficit where federal operating assistance is no longer available.

### **Cost sharing for urban and regional transit investments**

For routine capital and operating investments (13) for urban areas, the Commission recommends that capital investment be funded with 60 percent federal funds, 20 percent state funds and 20 percent local funds. Operating deficit should be funded with 50 percent state funds and 50 percent local funds.

To support regional rail service or a

busway system in the three major metropolitan regions, the Commission recommends that:

- Capital investment be funded with 50 percent federal funds, 25 percent state funds, and 25 percent local funds.
- Operations should be funded with at least 50 percent from fares, with remaining net operating deficits equally funded by the state and local governments.

### **Investment requirements for intercity rail passenger service**

Because analyses currently are underway to determine specific cost and operational requirements for expanded intercity rail passenger service in North Carolina, estimated investment requirements cited here are based on levels needed to implement two- hour, one-way travel time between Charlotte and Raleigh. Estimated investment for this level of service is up to \$500 million for two-hour service between Charlotte and Raleigh, and another \$150 million for connecting to the Northeast Corridor through Richmond, Va. and Washington, D.C., with uneven annual expenditures for pre-engineering and construction activities.

Funding required to implement the other intercity rail passenger service proposals being considered includes \$350,000 for preparation of an eastern

North Carolina rail passenger plan and \$3.1 million in capital funding to implement resumption of rail passenger service between Raleigh, Hickory and Asheville via Salisbury. The Transit 2001 Commission recommends that while the state should shoulder the capital and operating costs for the intrastate network, local governments should play a critical role in funding planning and station improvements.

A funding source should be identified for the acquisition and preservation of rail corridors, particularly those corridors needed for future high- speed rail service. These latter purchases cannot be anticipated in annual increments and the costs range from approximately \$17,000 per mile to \$300,000 per mile, depending on the market value of the land and track in place.

The average amount of funding for the program of intercity and high-speed rail improvements is expected to be about \$50 million annually. This amount would permit construction of the high speed passenger service between Charlotte-Raleigh- Richmond, Va. and to develop an intrastate rail passenger network.

### **Cost sharing for intercity rail passenger service**

Current rail planning assumes that costs for high- speed rail passenger service between Charlotte and Raleigh could be funded jointly and equally with federal and state sources, resulting in the



average, annual estimated state cost of \$25 million. However, high-speed rail passenger service in the Charlotte-Raleigh corridor and the required capital improvements needed for its implementation could be "commercially viable," or capable of being privately operated, especially if they are developed as part of the larger, multistate Southeast Corridor initiative currently under development and led by North Carolina.

## **Summary**

The investment requirements outlined provide a first-order approximation of funding levels needed to expand transit services and provide an integrated, seamless public transportation network that will maintain its relevance and value with continuing growth and development. These investments provide essential travel options for all North Carolinians and support new development patterns that protect the character of our communities and preserve our unique style of living.

Notes:

13. Routine capital costs include bus replacements, new bus purchases, facility improvements, construction of transfer centers, passenger amenities, new technology deployment, spare parts, etc. Operating expenditures are the net operating deficit after farebox revenues are considered.

## 6.3 Enhancing performance: transit-supportive policies and initiatives

A variety of new policies and strategies are necessary over the next decade and beyond to get a full return on our future transit investments and improve our ability to meet the Transit 2001 plan's broader vision.

These include:

- New and innovative technologies for transportation, including information and communications systems, lightweight materials and fare-handling equipment;
- Governance arrangements that foster regionalism and regional planning, improve multimodal coordination and expand the involvement of private businesses in public transportation; and
- New and innovative policies and processes that integrate land use, development and transportation-

investment decisions and encourage greater choices for housing arrangements and sustainable development.

### **New technologies**

Innovative, new technologies are rapidly bringing the application of new concepts and ideas to surface transportation, and particularly public transportation. The Transit 2001 Commission recognizes the importance of innovative technology and recommends that future public transportation investments include new technologies, especially those focusing on electronic telecommunications systems designed to give service providers and passengers real-time information about the status of travel and public transportation services throughout the community or region. There are broad opportunities for new technologies that could significantly enhance the convenience, safety, comfort, service reliability and cost effectiveness of transit services. Some emerging technologies that could have great impact on public transportation in North Carolina include alternative fuels, Intelligent Transportation Systems and new vehicle designs.

### **Alternative fuels**

Transit systems throughout the nation actively are testing a wide range of alternative fuels that could lead to transit vehicles that reduce diesel engine

emissions, rely on battery power, have hybrid drives or low emission diesel engines, or use liquefied petroleum gas (LPG), compressed natural gas (CNG) or methanol.

Automobile, energy and transit industries have conducted considerable research to evaluate the benefits and costs of alternative fuels and propulsion systems. For public transit, CNG has emerged as the preferred alternative fuel. More than 600 CNG buses are in service nationwide and transit systems have reportedly ordered 600 more. While new CNG vehicles can cost as much as \$50,000 more than other models, operating costs and vehicle performance appear to be better for CNG buses than for other alternative fuel vehicles.

Introduction of CNG and other alternative, low polluting fuels into the transit market has triggered other advantages that could be strategically more important to a transit industry seeking to increase its relevance and role over the long term. First, there are new opportunities to join private fuel suppliers in development of the infrastructure they need to make alternative fuels more widely available and more economical. For example, a number of transit systems and energy suppliers across the country have entered into cost effective agreements to develop innovative fueling systems. A second benefit comes in the form of community response to cleaner fuel technologies.

Introduction of cleaner powered vehicles can increase ridership and the willingness of citizens to embrace new routes and services.

Farther into the future, "hybrid" drive vehicles that use combinations of engines, batteries and generators, could operate efficiently by directly providing power or generators that supply power to high-capacity batteries. Cost and the availability of fuel traditionally have been major deterrents to the widespread introduction of alternative fuels and propulsion. With the increasing availability of well tested technologies, we can place considerably more emphasis on overcoming these barriers through policy initiatives and partnerships with private industry.

### **Intelligent transportation systems**

Perhaps no area of technology has received more attention than applications of advanced electronics, telecommunications and computers to surface transportation. Expansive, national initiatives have been underway for several years to introduce combinations of Intelligent Transportation System (ITS) technologies to all modes of transportation. Among the half dozen recognized groups of ITS technologies, Advanced Public Transportation Systems (APTS) offer enormous opportunities to improve transit efficiency, reliability and responsiveness. There are five basic

types of APTS technologies that transit systems -- including some in North Carolina -- currently are testing: automatic vehicle locator systems (AVLs); automatic passenger counters; advanced fare collection media; computer telephone information systems; computer scheduling and dispatching software; and passenger information displays and annunciators.

Automatic vehicle locator systems enable prospective passengers to obtain real-time information about arrival and departure times and the status of specific vehicles along specific routes while at transit stops, stations or at home. AVL systems also can provide operators with status reports that allow more efficient vehicle dispatching. AVL systems can rely on signpost applications or global positioning satellite (GPS), technologies. Transit systems in many states have implemented AVL technologies, including Baltimore, Maryland; Buffalo, New York; Kansas City, Missouri; Milwaukee, Wisconsin; Montgomery County, Maryland; Portland, Oregon; and Tampa, Florida. The use of AVL systems in Milwaukee reportedly has reduced the number of vehicles operating off schedule by 40 percent.

Automatic passenger counters offer new levels of sophistication and accuracy in data gathering and service analysis, which can help to cut costs and tailor service to specific market demands.

Advanced fare- collection media use

"smart cards" and other card-reading technologies to collect fares and data. Using these technologies can increase convenience for passengers, support a wide range of fare strategies and other pricing mechanisms and reduce boarding and waiting times. Advanced fare collection also can yield new partnership arrangements with private businesses and industries that supply, manage or distribute the technology and that often will underwrite costs, potentially exposing new markets to the value and convenience of transit.

Computer telephone information systems provide fast, reliable and accurate information for prospective passengers at substantial cost savings with improved abilities to monitor and respond to changing market demands.

Computer scheduling and dispatching software and systems ensure better, more responsive service to passengers while providing greater efficiency and cost effectiveness for operating agencies.

Passenger information displays and annunciators expand opportunities to inform prospective riders about available services. The information systems can offer trip-planning services and enable passengers to spend time more productively, and they can be developed in multiple languages where appropriate. Passenger information displays (PIDs) can have many forms, can be located in almost any setting or location and can be interactive. Annunciators, or "talking

buses" can enhance the confidence of visually- impaired riders.

### **New vehicle designs**

A final area in which new technologies offer the promise of significant advances in transit service is in the area of new vehicle design. New generations of light-weight composite materials, extensive reliance on computer-based vehicle subsystems and other design breakthroughs will enhance passenger experiences and provide services efficiently, reduce operating costs. The introduction of low- floor buses into the U.S. market represents an interesting innovation that is gaining appeal in some states. While the new design sacrifices some seating, it significantly enhances comfort and convenience for passengers. The absence of steps makes loading and unloading easier and faster for elderly passengers or people with packages. These and related design factors already have been associated with significant ridership increases in some locations.

Each new technology has the potential to increase comfort, convenience and reliability for passengers, reduce cost and increase operating efficiency for transit systems. The Transit 2001 Commission supports the implementation of a comprehensive, coordinated, statewide effort to examine and broaden the use of emerging technologies to enhance the appeal and performance of public transportation in North Carolina.



## **New governing arrangements for surface transportation**

There are many organizational approaches to managing the delivery of public transportation services, with significant variations based on the type and scope of services being provided and the size and extent of the area being served. North Carolina is somewhat unique in its high degree of reliance on operating departments of local governments to manage and provide transit services. Our state also is unusual in the strong role it plays in planning and programming urban transportation investments.

## **Rural governing issues and options**

North Carolina has achieved remarkable success in coordinating rural general public and human service transportation. Despite this record of achievement, three important governance issues remain. First, greater effort must be made to effectively coordinate services and operations, and the role the state will have in the coordination process needs to be clarified. Second, the advantages and disadvantages of multicounty service provision and management must be re-examined. Statewide experience with single- county and multicounty public transportation systems can provide ways we can become more effective and more efficient. Third, there is significant and growing demand in rural communities

for all types of public transportation. General public and human service transportation agencies in rural areas must address these needs for expanded services.

The Transit 2001 Commission recognizes the importance of cooperation and coordination for rural public transportation services and recommends continuing efforts to improve service delivery and management by consolidating or otherwise integrating the roles and procedures of NCDOT and the state Division of Human Resources.

### **Urban and regional governing issues and options**

Three fundamental issues are very important to the nature and effectiveness of governance for surface transportation in our state's urban areas and metropolitan regions. First, there is a geographic mismatch that exists between travel patterns and behavior, that increasingly are regional and multi-jurisdictional in scope and consequence and service that is operated largely by and within individual municipalities. The relevance and use of public transportation will remain limited as long as the scope of transit services does not reflect the geographic character of travel in the region. An exception to this circumstance is the Triangle Transit Authority (TTA), which is chartered to plan and implement public transportation improvements throughout the Research

Triangle metropolitan region. Even with TTA's charter, however, Raleigh, Durham and Chapel Hill continue to operate separate municipal transit systems.

A second fundamental issue is the disconnect that exists between agencies responsible for making transportation investment decisions and those responsible for guiding growth and development. The lack of effective attention to or integration of transportation and land use planning at a regional scale reduces efficiency and increases the cost of new development and transportation infrastructure. While consequences of inadequate transportation and development linkages are beginning to loom large in the minds of professional planners, neither elected officials nor government agencies appear eager to renegotiate their respective roles for more effective regional planning and programming processes.

Finally, while ISTEA emphasizes open, cooperative, collaborative decision-making between states and localities with respect to transportation planning and investments, the authority and resources to design projects and commit funds for their implementation lies with the state. Designated metropolitan planning organizations (MPOs) and local governments in North Carolina indicate their priorities to the state which directs major transportation investments, based on these priorities.

While the validity of these observations can vary among urban areas and metropolitan regions, the Transit 2001 Commission recognizes the importance of increased attention to these issues. Foremost, the Commission recognizes the need to empower regional agencies along the lines of the Triangle Transit Authority and the need to introduce more effective and broadly structured regional planning processes.

In other states, metropolitan planning organizations and organizations like the Triangle Transit Authority provide useful models for regional cooperation by:

- Focusing attention on regional issues and solutions;
- Emphasizing connections and trade offs between development options and transportation options;
- Exploring and negotiating the appropriate balance of transportation investments; and
- Directing the provision of services on a regional scale that reflects regional travel demands.

### **Governing intercity rail passenger service**

State government has led and must continue to lead the development of new, intercity rail passenger services for North Carolina. Only limited consideration has been given, however, to the ultimate structures and authorities that could help implement or operate expanded rail

passenger services and facilities. Recent issues involving the North Carolina Railroad Company, the state Department of Transportation, the North Carolina Rail Council and the state Board of Transportation indicate the need to establish clear responsibilities and authority for executing an aggressive, intercity rail passenger program.

The Transit 2001 Commission recognizes the importance of the state's role in developing intercity rail passenger services and recommends that a comprehensive and focused assessment be initiated to evaluate long-term organizational structures and responsibilities to successfully implement and operate the rail passenger program.

### **Private-sector involvement**

Although the term "governance" implies that the actions and responsibilities central to implementation of the Transit 2001 recommendations are largely the responsibility of government and the public sector, expanding the role of the private sector in planning and providing public transportation services has become a key strategy in the effort to meet future transportation needs in other states.

Private business and industry already have significant roles in providing transportation options for North Carolinians such as private taxicabs, transit operations under contract to

government agencies, private intercity bus systems, ridesharing programs for employees, customers and clients, and a range of administrative and support activities for transit agencies, from accounting and legal services to contract maintenance for facilities and vehicles. Increasingly, there also are examples of more expansive roles for private agencies in public transportation, ranging from leasing programs to underwrite costs for vehicle purchases, to major joint development projects, to the design/build/operate/manage (DBOM) approach to major fixed-guideway transit systems.

While numerous legal, regulatory and economic issues can complicate public-private partnerships, there also are considerable benefits. These partnerships effectively can expand access to capital, reduce public costs, improve public cash flow, enhance professional expertise and build broad coalitions. The foundation for these efforts must include a clear policy commitment to support and encourage the involvement of private business and industry in all aspects of investment and service. This perspective must be more clearly articulated and effectively promoted by the state's transportation policies and plans.

The Transit 2001 Commission recognizes the importance of private business to public transportation and supports expansion of the private sector's role consistent with the goal of

expanding the scope and relevance of public transportation. Furthermore, the Commission urges the development of private-sector outreach initiatives by the state and public transportation systems to capitalize more fully on opportunities for joining public and private forces for expanded public transportation in North Carolina.

### **New development patterns for the 21st century**

The increasing importance of closely linking land use planning with transportation investment is well documented. Land use and transportation principles discussed in Chapter 5 establish a broad framework for new, comprehensive state and local policies that can help foster more livable development patterns, including increased availability and use of public transportation. To underscore the importance of these principles, the Transit 2001 Commission endorses the following policies, procedures and actions. They are presented in four broad categories:

#### **1. Policy, legislative and regulatory actions**

- Broaden the current, state law definition of "comprehensive street plan." Revise and broaden NCDOT regulations governing preparation of "comprehensive street plans."
- Authorize and/or require counties to

receive payment from developers in lieu of constructing sidewalks and public transportation, pedestrian or bicycling facilities.

- Require Transportation Demand Management (TDM) plans for state facilities.
- Expand and implement Transfer of Development Rights (TDRs) enabling legislation.
- Establish planning and infrastructure funding incentives for implementing and administering countywide, land use planning programs.
- Expand local authority by passing legislation to finance "livability" plans, policies, programs and related "best practices" in planning and development:
  - a. Financial partnership authority,
  - b. Joint development authority,
  - c. Tax increment financing authority,
  - d. Zoning incentives for inclusion of affordable housing, and
  - e. Tax credits, like those for historic preservation, for in-fill and reuse developments.

## 2. Institutional and state agency actions

- Evaluate the establishment of transportation planning as an independent, multimodal function within NCDOT.
- Rationalize regional planning boundaries and processes.
- Remove or repeal the state



exemption from compliance with overlay district requirements.

### 3. Planning and design standards

- Develop an up-to-date "tool kit" of land use and transportation planning practices and standards for communities.
- Incorporate the concept of building "set- forwards" rather than setbacks into zoning and subdivision regulations.
- Incorporate the concept of parking "maximum" requirements in zoning and subdivision regulations.
- Incorporate the concept of shared parking in zoning and subdivision regulations.
- Incorporate requirements for pedestrian connections into zoning and subdivision regulations.
- Incorporate sidewalk requirements inside "growth areas."
- Update and expand use of pedestrian and transit- oriented design (TOD) overlay districts in zoning regulations.

### 4. Marketing, public education and analysis

- Highlight, promote and reward "best practice" ideas and concepts in development to a broad range of audiences.
- Analyze economic consequences and advantages of new development

patterns.

- Describe and promote the processes, values and results of regional planning and envisioning.

**In the opinion of the Transit 2001 Commission, joint action on these issues is needed by the state and local officials to provide a sound basis for more wisely accommodating future growth and development, and as a basis for assuring that adequate transportation options are available and are used most effectively.**

## 6.4 Consequences of doing nothing

It is vitally important to understand the consequences of not pursuing the course of action recommended by the Transit 2001 Commission. Consider these facts:

- North Carolina's population is forecast to grow by nearly 17 percent between 1995 and 2010 with the addition of 1.2 million new residents.
- The population of our state's urban counties will grow at an even faster rate, increasing by almost 30 percent by 2010. The vast majority of that growth will occur in our burgeoning suburbs.
- Our elderly population will continue to increase as a percent of total population, requiring more investment in human services and related transportation needs.
- Continuation of current suburban development patterns will spread new development over hundreds of thousands of acres of undeveloped forest, agricultural lands and

ecologically sensitive areas, requiring the use of personal vehicles for virtually every trip and increasing the costs of public services and infrastructure.

- Vehicle- miles of travel are increasing at a rate of four percent each year.
- Road building has not and will not keep pace with growth in travel demand and traffic congestion in many crucial corridors.
- Current levels of transit investment across the state are inadequate to maintain current systems and services.
- Public transportation will need an increasing share of transportation funding just to maintain existing services and facilities, leaving less funding available for new facilities and expanded transportation capacity in future years.
- Current levels of public transportation accommodate only one percent of total trip- making in North Carolina.
- Even modest increases in public transportation will not significantly increase transit's share of the travel market.
- North Carolina has one of the lowest per- capita levels of state investment in public transportation in the nation.

These facts and trends have very serious

implications for the long term growth and vitality of North Carolina's economy and our ability to maintain a high quality of life in the years ahead. State and local policies and programs have been slow to react, but there is a growing recognition among citizens and community leaders that we must make better decisions to accommodate growth and serve our growing travel needs.

**If we do not act, we will have signalled through this inaction our acquiescence to a future in which virtually every trip necessary to support our daily lives must be made in a private automobile.**

Transit 2001 Technical Report  
Chapter Seven

# Tomorrow's Transit Funding and Finance

- **The Transit 2001 Commission is committed to identifying increases of approximately \$75 million annually (phased in over four years) in state funds for rural and human service transportation, urban and regional transit and intercity rail passenger service.**
- **Transit funding must support all areas of the state because the needs are widespread.**
- **The Commission believes that the most appropriate funding plan includes three parallel approaches: the state General Fund, state Highway Fund and new transportation-related taxes.**
- **The transit funding and finance package must be in partnership with the highway funding program.**
- **There should be a renewed focus on providing increased flexibility**

**for local governments to raise funds for transit and other transportation purposes.**

The foregoing transit visions, goals and specific program recommendations cannot be pursued and accomplished without considerable increases in funding. The Transit 2001 Commission is committed to a revitalized statewide effort to accomplish the following:

- Obtain funding increases of \$75 million annually for rural and human service transportation, urban and regional transit and intercity rail passenger services.
- Identify three major state sources as appropriate for this purpose: General Fund revenues, Highway Fund revenues and new taxes.
- Aggressively seek federal funding for transit programs and specific projects.
- Provide increased flexibility for local governments to raise funds for transit and other transportation purposes.

While roadway maintenance and rehabilitation needs throughout the state will continue, it is critical that North Carolina provide and/or otherwise obtain funding necessary to deliver transportation options to its citizens. The Commission believes the state can -- and must -- afford both highway programs and transit programs, and that transit

services can be enhanced greatly without appreciably affecting highway expenditures. Indeed, high quality transit services in all areas of the state support growth and development objectives, help alleviate highway congestion and associated air pollution and have a major impact on jobs and other issues which directly affect the quality of our lives.

This chapter describes the primary principles adopted by the Commission in developing the funding and finance program and defines the assumptions on which the Commission based its recommendations. It outlines funding options from federal and local sources, as well as the key ingredients of two options for funding state initiatives from state sources. Ideas for private sector participation in transit finance also are noted.

## 7.1 Highlights of transit needs

As identified by Chapter 1, the state's funding contribution for transit programs is about 1.1 percent, or about \$20 million of total annual state transportation expenditures. This level of support only covers about one-fifth of the real needs of various transit programs which immediately require an additional \$75 million per year. Annual transit needs in 10 years will total nearly \$265 million, of which, the state should contribute an additional \$95 million.



As noted in Chapter 6, there are widespread unmet needs in the rural and human service transportation sector that jeopardize the access of many rural citizens to jobs, medical care, shopping and other necessities. These needs include the provision of vans and equipment, as well as funds for operations. Likewise, in our urban areas, lack of funding has limited expansion of routes and schedules, inhibited development of intermodal terminals and other capital improvements and generally depressed new service introduction.

Exciting new plans for regional transit services in the Charlotte and Research Triangle metropolitan regions (now) and the Piedmont Triad region (in the near future) will require substantial amounts of capital. Likewise, the ambitious goal of two-hour intercity rail passenger service in the corridor between Raleigh and Charlotte will require a continuing investment for a number of years. For example, approximately \$80 million is needed in the next several years to make roadbed and signal improvements, as well as the acquisition of high speed train sets, which will enable the under-three-hour service target to be achieved.

## 7.2 Funding and finance assumptions

Transportation funding at the federal level is in a state of flux, given the September 30, 1997, expiration of the Intermodal Surface Transportation Efficiency Act (ISTEA). Within the current ISTEA legislation there are continuing opportunities for the use of federal transportation funds for transit purposes, for example, under the Surface Transportation Program (STP). Whether or not these provisions will survive intact in the 1997 reauthorization is subject to much speculation. On the other hand, state highway funding in North Carolina is relatively secure, especially with the recent passage of the \$950 million bond referendum to accelerate paving rural roads, completing the urban loop and highway systems. At present, state transit funding does not enjoy a similar stable and adequate source of revenue.

Within this federal and state funding environment, the Transit 2001 Commission has embraced several important assumptions which will affect the deliberations over transit funding and

finance. They include the following:

- Federal urban transit funding for operations will continue at reduced levels over the next several years and could expire altogether within about five years.
- Federal funding for high-speed rail passenger services will continue to be entirely inadequate nationwide (now about \$28 million total), so any portion North Carolina can obtain will have little significance in terms of meeting overall state needs. Should significant federal funds be made available, state requirements can be reduced commensurately.
- Federal funding for programs such as Congestion Mitigation and Air Quality improvements and Enhancements -- each of which could be used for some transit purposes -- either are oversubscribed substantially or currently are unavailable for transit programming in North Carolina and thus will not contribute substantially to solving the state's transit needs.
- In most situations it will be advantageous to use a combination of federal, state, local and private sources of revenue. The balance will vary depending on the program or project.

Although the vision of the Commission is more expansive, the planning horizon for the funding and finance analysis is 10

years, as a practical matter. Despite the uncertainties, particularly at the federal level, it is important that the state and local governments focus on the ways and means to launch and sustain their own transit initiatives and not depend on an uncertain federal budget process. In any case, the needs remain and it is the responsibility of the state -- in cooperation with local governments -- to provide the leadership necessary to ensure they are met.

## 7.3 Principles of the funding program

There are many variations in how sources of revenue might be applied to transit. In order to somewhat limit these vagaries, the Commission adopted a set of guiding principles with regard to the development of funding and financing options. They are as follows (no priority intended):

- The state should ensure dedicated, reliable and stable sources of funding for transit. This is a hallmark of highway -- and other major -- funding programs. It would assist the state and local communities greatly in planning for transit capital and operations investments.
- The latent demand and needs for improved transit services throughout the state (rural, human service, urban, regional and intercity) greatly exceed the amount of funding that is currently available. In the urban setting, an "optimal" level of service and the funding necessary to provide

it is the only strategy that will enlarge transit's market share. Proposed "better" or "modest" levels lose ground in terms of the proportion of trips provided by transit and thus are limited in their impact. Eventually, all transit systems must be able to be funded at the "optimal" level. (See discussion in Chapter 6.)

- Transit funding and finance programs must support all areas of the state because the needs are widespread. For example, human service transportation in rural areas is as critical to those it serves as is intercity or regional rail for its patrons.
- The transit funding and finance package must evidence a partnership with the highway funding program. If possible, the identification of revenue sources should result in increased funding for both transit and highways.
- Where traditional federal sources of revenue are expected to decrease, state and local communities must fill in the void to ensure the continuity and enhancement of transit services. At the same time, the state must work aggressively through its congressional delegation and others to capture additional federal funding.
- The state transit funding and finance package should have three potential

sources: the state General Fund, the state Highway Fund and new taxes or fees. The state Highway Trust Fund is off-limits.

- Where possible, revenue sources from the state General Fund or new fees must relate in a reasonable way to transit use and services. As an initial step, transportation generated funds (such as gasoline taxes) that are now contributed to the General Fund may be "re-captured" for transit and transportation programs.
- As appropriate, revenue sources can be phased in over a period of years. This may be particularly relevant in situations where General Fund revenue is being "re-captured." A four-year phase-in would be appropriate for planning purposes.
- The state should commit to the use of existing federal and/or state transportation funds for eligible transit projects such as busways. Also, the state should evaluate the use of "flexed" federal funds for certain transit capital projects. (See discussion in Chapter 3.)
- Private sources of revenue and private participation in transit programs and projects should be identified and employed where feasible. Use of private sector partners in transit investment thus far is relatively limited in North Carolina.
- The state should work to provide

increased flexibility for local units of government to fund transportation activities, including transit initiatives, from local sources. This will mean enacting enabling legislation to empower counties and municipalities to raise funds for specific purposes, including capital or operating assistance to transit properties and/or roadway maintenance and rehabilitation. The state's role will continue to be one of providing planning, technical and funding assistance and coordination. Decisions about local transit operations will continue to be left to the local governments.

- When feasible, new state funding sources should involve returning a percentage of the revenue to local communities in proportion to their contribution. A return to source feature might be combined with authority for local units of government to decide how best to use the funds for eligible transit or highway purposes, or both.

While it will be difficult to design a transit funding and finance package which adheres precisely to these guiding principles, it seems possible to adhere to most of them. While all principles are very important to the future of the state transit program, if any one would be singled out, it would be the need to establish a dedicated, reliable and stable



source of transit revenue. Only by doing so may all the citizens of the state -- whether rural or urban or suburban -- be assured that transit options will be available for their families and businesses in the years to come.

## 7.4 Options for state funding

There are three basic sources of state funding being recommended: the state General Fund, the state Highway Fund and/or new taxes or fees. Potential revenue sources are denoted in detail in Figure 7A. Currently, the state Highway Fund provides money primarily for highway maintenance and rehabilitation and a small amount for transit and rail passenger capital projects. As noted earlier, the state Highway Trust Fund was established in 1989 for several specific highway purposes and thus is considered "untouchable" by the Commission. It is recommended, however, that upon completion of both the secondary roads paving program, at the 50 average daily trips (ADT) level, and the urban loop program, funds designated for these programs could be tapped for highway and transit use in rural and urban areas, respectively.

The Commission focused its efforts on the following six sources of state revenue for potential funding of the transit program:

- Remove sales tax payment to state General Fund from NCDOT
- Use state Highway Fund for transit
- Increase state passenger- vehicle registration fees
- Return responsibility for funding driver education to the state General Fund
- Increase gasoline tax
- Direct sales tax on vehicle parts and accessories to NCDOT from the state General Fund

All of the revenue sources shown in Figure 7A are worth examining. Some obviously are more politically palatable than others. All raise substantial amounts of revenue relative to transit needs. Several sources mean increased taxes (increase in gasoline taxes, increase in vehicle registration fees), several recapture transportation user fees now deposited in the state General Fund (sales tax on NCDOT purchases, sales tax on auto parts and driver education funds) and one would represent a reprioritization of an existing NCDOT source (state Highway Fund).

While an increase in the gasoline tax is attractive in terms of the substantial amount of revenue which can be raised with a nominal increase "at the pump," it is politically difficult at present. It may be useful, however, to keep the idea in play because it has been shown that small increases in the tax do not affect demand for the product and are not noticeable to

motorists. And while North Carolina has one of the highest gasoline taxes in the region, it also maintains the largest roadway system in the country -- including all "county" roads. Thus, North Carolinians pay no county ad valorem taxes to build or maintain this system.

There also are other "diversions" of transportation revenue to the state General Fund, such as for the Highway Patrol. While a case can be made to recapture these funds also, it is probably not feasible at this time.

## 7.5 Combining sources: two primary options for funding state transit programs

There are many combinations of state funding sources that could provide the needed revenue within a reasonable time frame. The Transit 2001 Commission believes these options give decision makers some latitude in packaging the most feasible approach to undergird the state's transit program into the next century. In order to establish a baseline for discussion, however, the Commission has endorsed the following two primary options which produce the additional \$75 million per year target revenue increase within a four year time frame.

### **Option 1:**

- Remove sales tax payment to the state General Fund from NCDOT. This approach is considered a "given" in any scenario. Inflation is assumed at 6 percent in the early years and 3 percent thereafter.

- Return responsibility for funding driver education to the state General Fund. These funds currently are provided to the state Department of Public Instruction by NCDOT and come from gasoline taxes and other transportation sources. After a four-year phase-in period, they are inflated at 4 percent annually.
- Increase the use of state highway funds for public transportation. These funds are phased in over a four year period at \$5 million per year, for a total increase of \$20 million. Following the phase in period, they are inflated at two percent annually, which is approximately equivalent to the annual growth rate of gasoline taxes.
- Increase state passenger vehicle registration fees. This source would apply to all registered passenger vehicles. It represents a \$5 increase in annual fees, inflated at two percent per year. A significant feature of this revenue source is the possibility of a "return to point-of-origin" approach, through which funds would be collected by the state and returned entirely or in part to the county in proportion to the fees paid by citizens of that county. Funds generated in this way could be directed to various public transportation needs. In urban areas, these funds could support programs of the Americans with Disabilities

Act, for example, and in rural areas they could be used for transportation for elderly citizens, people with disabilities or other human service transportation needs.

Option 1 as noted in Figure 7B does not reach the required \$75 million annual level until 2001. In this regard, the Commission recognizes the practical aspects of substantially increasing transit funding and thus it has chosen to phase it in over a four year period. For the same reasons, this approach also is taken in Option 2, which is detailed below.

### **Option 2:**

Option 2 as noted in Figure 7C represents the "no new taxes or fees" approach in which the state Highway Fund contributions to the public transportation program are increased by \$40 million annually, phased in -- as before -- over four years, and the increase in passenger vehicle fees is dropped. Otherwise, the two options are identical.

The Transit 2001 Commission is confident that both options outlined above represent reasonable ways of meeting transit funding requirements for the next decade. In Option 1, the funding is shared among the state General Fund, the state Highway Fund and a new source of revenue, the increase in vehicle registration fees. In Option 2, no new fees are involved. Both options would support a wide array of transit improvements and innovations across the

state for rural, urban, regional and intercity needs. All the proposed revenue streams are directly from transportation sources.



## 7.6 Possibilities for federal funding

As noted elsewhere, considerable funding is available to North Carolina for transit purposes under current federal legislation, provided the state exercises its option to use a portion of its federal highway funds for transit purposes. The most likely scenario is the possible "flexing" of federal STP (or other program) funds for "new starts" or any other transit capital expenditure such as intercity or regional rail projects. The Transit 2001 Commission anticipates that major capital projects will be funded as follows: 50 percent federal, 25 percent state and 25 percent local.

There are several other possible federal funding scenarios which could result in meaningful transit funding for the state. They are:

- The next major federal transportation legislation, or "NexTEA," will be similar to ISTEA. The state could designate a federal portion, for example 10 percent, of Surface Transportation

Program (STP) funds for transit capital projects, including those for rail passenger service. Under current formulas, this would have produced about \$100 million over the life of ISTEA, the six-year period ending September 30, 1997.

- The next major federal transportation legislation will include substantially increased flexibility for public transportation initiatives. The Clinton Administration's five year transportation reauthorization proposal -- based on early indications as of December 1996 -- includes increased flexibility in the use of National Highway System funds for rail capital improvements, intermodal connections and bus and rail terminals; the broader use of transit discretionary funds; and the use of Rural Transit Program funds for intercity bus or rail passenger service.
- "STEP 21," a proposal for the reauthorization of ISTEA supported by North Carolina and about half the states, would enable the state to designate a portion of additional funds received for transit. In fact, this proposed legislative approach is touted as more flexible -- because of fewer funding categories -- in its funding and thus potentially more "transit-friendly." The state could designate 10 percent, for example,

of flexible funds for transit purposes. In addition, if the STEP 21 proponents are successful in increasing the floor for return of additional funds to donor states such as North Carolina, a portion of these funds -- 25 percent for example -- should be designated for transit and rail passenger service capital projects.

- Congress will likely redirect the 4.3 cents-per-gallon federal gasoline tax from budget deficit reduction to transportation uses. If this were to happen, a portion -- conceivably 25 percent -- of the net additional funds could be used for transit and rail passenger service capital projects. At the federal level, speculation is that some funding would be set aside for transit, including as much as 0.5 cent for Amtrak.

Of course, none of the above scenarios can be predicted with any certainty, although one or more is likely to occur in the 1998 time frame, with revisions. The Commission recommends, however, that the state establish a policy now to allocate more federal funds for transit. In the meanwhile, the administration and state delegation should work diligently with similar interests (donor states and states with active rail passenger programs) to accomplish the following:

1. Achieve more equity in the distribution of federal funds.

2. Add intercity rail passenger service to the list of eligible uses of federal highway and transit funds.
3. Create a well funded federal intercity rail passenger service improvement program similar to the Northeast Rail Corridor program which has received hundreds of millions of dollars over several decades. An alternative favorable to North Carolina would be to fund a Southeast Rail Corridor program (Washington, D.C. to Atlanta through North Carolina) similar to the Northeast Corridor program.

## 7.7 Options for local funding

In light of the possible real decrease in federal funding for transit, the state and local governments must form a meaningful partnership to realize the Transit 2001 vision. In addition to planning and technical assistance, the state recognizes a responsibility to provide substantial funding to support local transit systems, as well as to provide for the systems which have state and regional significance such as intercity rail passenger service. This will involve not only a new approach to state funding, as outlined by this chapter, but also new authority for local units of government to raise the resources necessary to deliver public transportation services to their citizens. The Commission believes that additional flexibility must be provided by the General Assembly to enable local governments to do so.

Throughout the country, transit agencies have employed many varied -- and in some cases innovative -- techniques to fund transit services. Most

of these in the list that follows are or can be applied at the local level.

## **Funding transit services**

Broad-based sources:

- Fuel tax
- Property tax
- Income tax
- Sales tax
- Real-estate transfer tax
- Emission fees
- Auto registration fees
- Utility excise tax
- Payroll/"head" tax
- Rental vehicle tax
- Parking tax
- Vehicle-miles-traveled tax

Targeted sources:

- Transient-occupancy (on hotel rooms)
- "Sin" taxes (on alcohol, cigarettes, etc.)
- Business licenses and fees
- "Commuter" taxes (payroll-based)

Special financing districts:

- Unitary, ad valorem, or special benefit
- Special-benefit assessment districts
- Local/business improvement districts
- Utility/service districts

Growth-related mechanisms:

- Impact fees
- In-kind contributions
- Land transfer fees
- Tax increment
- Other developer exactions

Other mechanisms:

- Tax-exempt debt
- Advertising, concession fees, etc.
- Currency swaps
- Congestion pricing

Potential sources of funding and financing for transit needs offer an extremely wide range of yields, depending on the applied tax rate. For example, in Figure 7D the potential sources and revenue yields of some commonly used taxes and/or fees are presented, all of which could be applied in a "local option" situation. (The dollar figures, however, represent the yields as if the source were applied on a statewide basis.)

Obviously, the permutations and combinations of potential new or enhanced local revenue sources for transit in North Carolina are extensive, provided the local units of government are given the prerogative of levying them.

In the opinion of the Transit 2001 Commission, five local transit financing techniques have emerged as worthy of serious consideration:

- **Rental vehicle gross receipts tax.**

An additional tax would be levied on commercial rental vehicles and the proceeds would be dedicated to transit uses. If applied in the Research Triangle region -- Wake, Durham, and Orange counties -- at the five percent level, approximately \$6.3 million would have been available in FY 1996.

- **Vehicle registration surcharge.** An additional annual payment of \$5 per vehicle at the time of registration would yield \$3.3 million yearly in Wake, Durham and Orange counties, for example. The Triangle Transit Authority currently collects, through the state, this level of revenue to help fund capital and operations. Charlotte currently collects an annual \$30 local registration fee, referred to as an "auto privilege" tax, from city residents. Of the total, \$25 is committed for transportation purposes and \$5 is provided to the general fund.
- **Parking tax.** There are various means of assessing and collecting a fee or tax on parking spaces within a jurisdiction. Administratively, a sales tax on fee-paid commercial parking would be feasible. Other approaches, such as an ad valorem tax per space per year are more difficult, administratively. If applied in Mecklenburg County, for example, a \$10 per-space annual fee



would raise \$4.9 million.

- **Local-option sales tax.** This approach is used by major transit systems in the United States. In the Wake, Durham and Orange county region it would produce about \$43.5 million annually if applied at the 0.5 cent level.
- **Land-transfer fees.** Local governments may collect an "excise stamp tax" on real estate transactions at one percent of the value of the sales price. Seven counties in North Carolina currently have this authority. Of the seven, Camden, Chowan, Currituck, Dare, Pasquotank and Perquimans counties currently collect these taxes. In FY95 over \$4.2 million was collected in these counties through this particular funding authority.

Most of these examples of local funding mechanisms presently are not available to North Carolina jurisdictions because specific authority to use them has not been granted by the General Assembly. Local units of government thus are restricted in their ability to employ new sources of revenue for transit or any other public purpose. Breaking down some of these historical constraints should be an objective of a state/local partnership on behalf of unmet transit and transportation needs.

## 7.8 Private sources of funding and finance for transit

Private sector participation in funding and financing transit has a long history in the United States. Indeed, before the private automobile became so ubiquitous profit-making bus and rail systems were owned, maintained and operated by private companies, principally in urbanized areas. Intercity bus services continue to be provided by private businesses. Today, private financial participation in the provision of transit services primarily is limited to specific projects such as the joint development of a tract of real estate or the leasing of new equipment.

Three categories of securing funds and/or financing from the private sector are highlighted and briefly are explained below:

1. Leverage public assets
2. Leverage private assets
3. Borrow private funds

### **Leverage public assets**

- Lease public assets. Private funding may be obtained by allowing private entities to operate on existing publicly owned sites or in conjunction with the provision of transit services. Transit agencies thus would collect a stream of revenue from private entities who are interested in, for example, leasing office or commercial space in a train station, selling advertising on the sides of buses, leasing rights-of-way along rail corridors or obtaining exclusive rights to sell products and services in stations or on vehicles.
- Share public/private assets. Private funding for the construction and renovation of public facilities may be obtained by selling or leasing some of the public assets to private entities. This approach often is referred to as "joint development," where public and private interests invest and operate in a coordinated manner on the same or adjacent sites for mutual benefit. For example, a portion of a bus station site may be sold to a private entity and the proceeds may be used to pay construction or renovation costs. The public transportation agency (ies) and private entity(ies) also could arrange to share the operating costs of providing security, repaving parking lots and maintaining shared spaces -- again augmenting the

public revenues.

- Sell public assets. Private funding may be obtained by selling public assets. For example, public facilities might be consolidated and the surplus facilities or real estate sold to the private sector.

## **Leverage private assets**

- Create incentives for privatization. A company may design, build, operate and maintain (DBOM) certain facilities and services in exchange for access to a revenue stream enhanced by government credit supports. This approach may be used for proposed major investments in regional or intercity rail facilities, for example, where it obviates the need for large up front investments from the public sector. This approach also may be used for high- speed rail passenger services when it becomes commercially feasible.
- Lease privately owned assets. Public transportation agencies and private entities may enter into partnership agreements in which private investors or leasing companies provide the capital for the purchase of specific facilities or rolling stock for lease to the agencies. The private entity purchases the facilities or equipment, and the transit agency uses them and makes periodic lease payments to the private entity. This

approach also obviates the need for the transit agency to obtain a substantial amount of up front capital, such as through borrowing funds from a commercial bank or the tax exempt debt market. The public agency, using this technique, effectively converts a capital cost into an operating cost.

## **Borrow private funds**

- Borrow from private lenders. Public transportation agencies may obtain private funding by borrowing from one private entity, such as a commercial bank, or from many private investors through the issuance of tax-exempt bonds. In order to use these financing techniques, however, the public transportation agency has to have access to a stream of revenue that will allow it to repay the debt. One such mechanism is pledging the "full faith and credit" of the state of North Carolina -- an approach which the General Assembly has been reluctant to take. Other mechanisms include "grant anticipation notes" that pay from future grant funds and "revenue anticipation notes" that are repaid from dedicated farebox revenues.

Another is the creation of an "infrastructure bank," which may be used in at least two primary ways. One way is

through a revolving loan fund which could be used by transit properties for the purchase of equipment, for example, with the loans repaid over a period of years at lower interest rates. Another way is to establish a reserve fund to leverage the loans. This has the effect of making cash flow more manageable and making private investors more comfortable with lending large sums of money to public agencies, particularly in cases where revenue streams clearly are inadequate to cover debt service. It also might result in a higher level of lending and a more favorable loan rate for the public agency.

**The Commission believes it has surfaced two viable options for state funding which will allow the state's commitment to the Transit 2001 vision to be met. In addition, the Commission has offered five potential sources of new local option taxes to support transportation. The good news is that the Transit 2001 vision can be achieved for a price that seems well within our reach.**

Transit 2001 Technical Report  
Chapter Eight

# The Transit 2001 Action Agenda

- **The Transit 2001 action agenda includes legislative actions by the General Assembly, administrative actions by state agencies, introduction of new local and regional planning techniques and stepped- up public education activities addressing the Commission's recommendations.**
- **Funding, service design and community planning initiatives include steps to: 1) enact increases in state transit funding through legislative and policy changes, 2) expand local funding authority, 3) recover more of the federal transportation revenues sent to Washington, D.C., 4) introduce new service concepts, fare policies and marketing techniques, 5) introduce new energy, communications and materials techniques, 6) expand the use of regional authorities in service planning and operations, 7)**

**update relevant planning authority and processes, 8) introduce state-of-the-practice development guidance techniques and 9) recognize and promote "best" practices in land-use planning, growth management, transit planning and community design.**

The steady pace of growth and change that is underway in North Carolina presents an imposing challenge for state and local leaders, and for citizens. While continued expansion of the North Carolina economy is a central objective, the patterns of growth and the accommodation of future travel demand cannot be pursued through a "business as usual" approach in the years ahead. To do so will lead inevitably to the "Houstonization" of the state's fast-growing metropolitan regions, further isolation throughout our state's rural areas and increasingly unacceptable costs and consequences for residents, business, industry and government -- trends already in evidence in some areas of the state.

In short, it is essential that we begin now to introduce new ideas, principles and practices that can assure us of a wider array of transportation options that are interconnected in a seamless network of services and facilities extending throughout the state. To move in this direction, we must be bold and visionary. At the same time however, our agenda



for action must be rooted firmly in a sense of practicality and realism.

The Transit 2001 action agenda presented in this chapter meets these two tests. It outlines a series of actions that should be initiated today in three critical areas -- public transportation funding and finance, public transportation service design and delivery and broad-based community planning and development. In each of these areas discrete actions are noted, lead agencies and actors are identified, and a broad timetable is established.

## 8.1 The service design and delivery agenda

The ability to attract more transit riders and serve a larger share of the growing travel market requires actions that go beyond expansion of the traditional transit services currently in operation. Certainly, increases in the frequency, type, quality, reliability and cost-effectiveness of today's services will be essential if transit is to play a larger role in North Carolina's future. Action also must be taken to assure that the quality of transit services is improved continuously, concurrent with the expansion of services.

In addition, new, innovative services must be introduced. The transit service design and delivery agenda involves introducing new types and patterns of service, new fare and pricing policies and

new technologies. It also involves steps to introduce new organizational and governance arrangements, including broadening the role of the private sector in various aspects of public transportation. Any or all of the activities outlined below might be undertaken on a limited or demonstration basis as a means of initially assessing the impact and value of new approaches to service design and delivery.

### **New service types and patterns, fare policies and marketing strategies**

An increasing variety of new, nontraditional services, fare policies and marketing strategies are being introduced successfully by transit agencies around the country. While transit agencies in North Carolina have examined and have tested some of these innovations, the majority of public transportation services available across the state are traditional in scope and character. Because new initiatives typically incur higher than normal costs in early stages of implementation, the largest stumbling block to more aggressive experimentation and introduction of new service approaches has been the lack of adequate funding. To introduce new, state-of-the-practice, service-related initiatives into North Carolina communities, the following steps and actions should be taken:

New service types and patterns, fare policies and marketing strategies -- short-term (1-2 years) tasks:

- Initiate a new generation of regional system plans and multimodal major investment studies (MISs) in urban areas and key corridors  
-- -- Responsible party: NCDOT
- Evaluate the scope and effectiveness of current service coordination efforts at the state level and in rural areas  
-- -- Responsible parties: NCDOT and the state Division of Human Resources.
- Initiate rural and human service improvements to support Work First initiatives in rural areas of the state  
-- -- Responsible parties: NCDOT and the state Division of Human Resources.
- Initiate urban and regional service expansion (coverage, frequency, service integration and new modes): Busway/transitway development in the Charlotte region; regional commuter rail in the Research Triangle region  
-- -- Responsible parties: NCDOT and local agencies.
- Carry out first- phase improvements to intercity rail passenger service for two- hour service between Raleigh and Charlotte  
-- -- Responsible party: NCDOT.
- Continue to establish an intrastate

system of rail passenger service:  
Implement western North Carolina  
service; initiate service planning for  
eastern North Carolina service

-- -- Responsible party: NCDOT.

- Inventory current, nontraditional services, fare policies and marketing programs in North Carolina, and their performance: Rural and human services; urban and regional services  
-- -- Responsible parties: NCDOT and the N.C. Public Transportation Association.
- Summarize impacts of new, innovative service design and delivery elsewhere in the country: Rural and human services; urban and regional services  
-- -- Responsible parties: NCDOT and the N.C. Public Transportation Association.
- Conduct a conference/symposium on innovative transit service design and delivery  
-- -- Responsible parties: NCDOT and the N.C. Public Transportation Association.
- Establish a demonstration program to support deployment and evaluation of selected high- priority, innovative actions and activities: Rural and human services; urban and regional services  
-- -- Responsible party: NCDOT.
- Initiate selected first round of demonstration projects/programs: Rural and human services; urban

and regional services

-- -- Responsible party: NCDOT.

New service types and patterns, fare policies and marketing strategies -- mid-term (3-5 years) tasks:

- Complete initial updates of regional system plans  
-- -- Responsible parties: NCDOT and local and regional agencies.
- Continue conduct of multimodal major investment studies in key corridors  
-- -- Responsible parties: NCDOT and local and regional agencies.
- Continue urban and regional service expansion: Begin construction of regional rail/fixed guideway facilities; service coverage; service frequency; service integration -- terminal/transfer facilities, fare media, etc.  
-- -- Responsible parties: NCDOT and local agencies.
- Continue implementation of rural and human- service coordination  
-- -- Responsible parties: NCDOT, the state Division of Human Resources and local agencies.
- Continue intercity rail passenger service improvements.  
-- -- Responsible parties: NCDOT and local governments.
- Evaluate and report results and implications of initial demonstration projects: Rural and human services; urban and regional services

- -- Responsible parties: NCDoT and local governments.
- Update national information on innovative service design and delivery
  - -- Responsible parties: NCDoT and the N.C. Public Transportation Association.
- Conduct second conference on innovative service design and delivery
  - -- Responsible parties: NCDoT and the N.C. Public Transportation Association.
- Promote implementation of most effective service adaptations throughout the state's public transportation network
  - -- Responsible party: NCDoT.

New service types and patterns, fare policies and marketing strategies -- long-term (6-10 years) tasks:

- Continue regular regional system planning
  - -- Responsible parties: NCDoT and local and regional agencies.
- Continue efforts to enhance rural and human- service coordination
  - -- Responsible parties: NCDoT, the state Division of Human Resources.
- Carry out successive phases of intercity rail passenger service improvements
  - -- Responsible parties: NCDoT, the N.C. Rail Council and local

governments.

- Conduct periodic conferences on innovative service design and delivery
  - -- Responsible parties: NCDOT and the N.C. Public Transportation Association.
- Support implementation of most effective service adaptations
  - -- Responsible party: NCDOT.

## **New technologies**

New technologies are being introduced into the public transportation industry at an increasing pace and with very positive results. Alternative fuel technologies reduce vehicle emissions, noise and dependence on nonrenewable sources of energy. New vehicle designs improve attractiveness, add to passenger comfort and reduce operating costs. New electronic communications technologies improve service reliability, enhance access to information for the public (thereby reducing customer uncertainty) and reduce operating costs. The steps and actions highlighted below will allow transit systems across the state to take full advantage of emerging technologies while minimizing the risks inherent to their development and introduction. These risks can be reduced further by creating special demonstration programs to target and test specific new technologies in areas across the state.

New technologies -- short-term (1-2 years) tasks:

- Develop summary statements/assessment of the status and impacts of major emerging transit and transportation-related technologies: Vehicle design; alternative fuels; electronic communications; safety  
-- -- Responsible parties: NCDOT and the Institute for Transportation Research and Education (ITRE) at N.C. State University, Raleigh.
- Keep sponsoring federal agencies informed of technologies on which North Carolina places the highest priority for development and testing  
-- -- Responsible party: NCDOT.
- Survey North Carolina systems on technology interests and applications  
-- -- Responsible party: NCDOT.
- Convene transit/transportation technology summit with industry representatives and relevant technology experts  
-- -- Responsible parties: NCDOT and ITRE.
- Draft a multimodal "transit/transportation technology initiative" (relative merits, priorities, costs and funding)  
-- -- Responsible parties: NCDOT and ITRE.
- Implement priority transit elements of the "transit/transportation technology initiative" or advanced public transit systems (APTS): Computer-aided dispatching; geographic information systems



(GIS); customer information systems

-- -- Responsible party: NCDOT.

- Monitor and evaluate effects and consequences

-- -- Responsible parties: NCDOT and ITRE.

Mid-term (3-5 years) and long-term (6-10 years) tasks:

- Expand technology applications, as warranted

-- -- Responsible parties: NCDOT and transit systems.

- Monitor and evaluate effects and consequences

-- -- Responsible parties: NCDOT and ITRE.

### **New organizational and governance arrangements**

Planning and operation of effective public transportation services require heightened ability to assess and respond to circumstances at the regional level. It also requires that local, regional and state goals and priorities be brought into better balance in future transportation system, facility and service planning and investment. Finally, to meet future travel needs most effectively, new partnerships between government and the private sector must be forged on a variety of fronts. The steps and actions highlighted below indicate how these important adaptations can be pursued to improve transportation and development planning

and provide more efficient public transportation services.

New organizational and governance arrangements -- short-term tasks (1-2 years):

- Develop issue/decision papers on key organizational and governance topics: Characteristics of "seamless" transportation; alternative organization structures for transit service delivery of urban and regional services, rural and human services and intercity rail passenger service; opportunities and barriers to private sector involvement; examination of the NCDOT planning and support functions; assessment of NCDOT and NCDHR policies and programs  
-- -- Responsible parties: NCDoT and state Division of Human Resources.
- Convene key stakeholders on organizational and governance issues: Rural and human service interests; urban and regional service interests  
-- -- Responsible party: NCDoT.
- Review and evaluate enabling legislation for regional transit planning and operations  
-- -- Responsible parties: NCDoT, N.C. Public Transportation Association and local transit systems.
- (Re)draft model enabling legislation

on formation of regional authorities  
-- -- Responsible parties: NCDOT  
and N.C. Public Transportation  
Association.

- Draft revisions to the state general statute for the "development of a coordinated street system plan (GS136-66.2)" to reflect multimodal planning requirements and intergovernmental relations required in ISTEA  
-- -- Responsible party: NCDOT.
- Review selected state planning processes for "best practices" in integrating local, regional and state interests and priorities and ISTEA factors  
-- -- Responsible parties: NCDOT and ITRE.
- Convene industry and private sector representatives to develop actions and incentives to increase private sector participation  
-- -- Responsible parties: NCDOT and N.C. Public Transportation Association.
- Draft legislative and procedural provisions to remove barriers and expand private sector participation  
-- -- Responsible party: NCDOT.
- Prepare information package on legislative proposals  
-- -- Responsible party: NCDOT.
- Conduct General Assembly briefings  
-- -- Responsible parties: NCDOT and state coalition.

- Develop mechanisms for adequate and responsive rail corridor preservation
  - -- Responsible parties: NCDOT and N.C. Rail Council.

New organizational and governance arrangements -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Implement regional authorities, as needed
  - -- Responsible party: local officials.
- Promote introduction of "best practices" in intergovernmental processes
  - -- Responsible parties: NCDOT and local and regional agencies.
- Monitor and evaluate involvement of private sector
  - -- Responsible parties: NCDOT and transit systems.

## 8.2 The community planning and development agenda

Increasing the availability, quality and use of public transportation services is an essential step in accommodating projected growth in population and travel demand in future years. Improvements to the supply of services, however, only deals with half of the transportation equation. The other half involves the actions needed to influence transportation demand so that pressures on available services and facilities can be reduced, and so that the full potential of future transit and highway investment can be realized. The action agenda highlighted below is intended to encourage new practices in guiding future growth and development at the local level through more progressive use of community planning and development authority that already exists across the state.

### **Potential legislative, policy and regulatory actions**

Attention should be given to those aspects of local development planning and guidance that can be made more effective through modifications of the legal or statutory basis for their use.

Potential legislative, policy and regulatory actions -- short-term (1-2 years) tasks:

- Assess the need for and merits of selected changes: Developer payments to counties in lieu of constructing transit, pedestrian and bicycle facilities; transportation demand management (TDM) plans for state facilities; expansion of transfer of development rights (TDR) authority; use of planning and infrastructure funding incentives for local and county land use plan implementation; expand local authority to institute innovative funding mechanisms to support "livability" plans and programs -- -- Responsible parties: NCDoT and the N.C. Institute of Government.
- Convene local, regional and state planning officials to evaluate adaptations in current planning law and regulation -- -- Responsible parties: NCDoT, state Progress Board and the N.C. Institute of Government.
- Convene development community to assess means of accelerating transit-friendly development

- -- Responsible parties: NCDoT and state Progress Board.
- Draft proposed legislation
  - -- Responsible parties: NCDoT and the N.C. Institute of Government.
- Enact recommended changes
  - -- Responsible parties: NCDoT and the N.C. Institute of Government.
- Prepare guidance to assist in implementation of changes
  - -- Responsible parties: NCDoT and the N.C. Institute of Government.

Potential legislative, policy and regulatory actions -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Monitor and evaluate the effect of revised planning provisions
  - -- Responsible party: NCDoT.
- Revise legislation and guidance, as needed
  - -- Responsible party: NCDoT.

### **State agency and institutional actions**

The effectiveness of ongoing land use planning and development guidance potentially can be enhanced through a number of actions that can be taken by state agencies, in cooperation with local officials, developers, property managers, other stakeholders and citizens.

State-agency and institutional actions --

short-term (1-2 years) tasks:

- Convene stakeholders to assess the state of the practice in land use planning and the consequences of current practice.
  - -- Responsible parties: NC League of Municipalities, state Progress Board, NCDOT and other state agencies.
- Develop an action agenda of recommendations to update and enhance state planning practices and policies. Revise practices in key areas, such as: Rationalize and consolidate regional planning boundaries and processes; examine potential incentives to reinforce implementation and adherence to revised policies and practices: stakeholders and other state agencies
  - -- Responsible party: NCDOT.
- Enact necessary statutory, regulatory and administrative changes
  - -- Responsible parties: state General Assembly, NCDOT and other state agencies.
- Monitor impact of enacted changes
  - -- Responsible parties: state Progress Board, NCDOT and other state agencies.

State agency and institutional actions -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Solicit suggestions for additional revisions to state policies



- -- Responsible parties: NCDoT and other state agencies.
- Make changes in state policies, as needed
  - -- Responsible parties: NCDoT and other state agencies.
- Monitor impact of enacted changes
  - -- Responsible party: NCDoT.

## **Planning and design standards**

An increasing number of states and localities are introducing innovative new standards, guidelines and practices to guide growth and development more effectively, consistent with broad quality of life and livability goals. The steps and actions highlighted below are intended to heighten awareness and consideration of these approaches in localities throughout North Carolina.

Planning and design standards -- short-term (1-2 years) tasks:

- Assemble and prepare package of representative examples of new land use planning practices -- a "tool kit;" building "set-forwards." "maximum" parking requirements; "shared parking; pedestrian connection requirements; sidewalk requirements for designated growth areas; pedestrian and transit- oriented design "overlays;" growth boundaries; development fees
  - -- Responsible parties: NCDoT, other state agencies, N.C. Public Transportation Association,

professional organizations and the N.C. Institute of Government.

- Promote incorporation of these and related innovations in local zoning and subdivision regulations at local option
  - -- Responsible parties: NCDOT, other state agencies, professional organizations and the N.C. Institute of Government.
- Monitor the impact of new planning practices
  - -- Responsible parties: NCDOT, other state agencies, professional organizations and the N.C. Institute of Government.

Planning and design standards -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Monitor and update the "tool kit."
  - -- Responsible parties: professional organizations.
- Promote incorporation of these and related innovations in local zoning and subdivision regulations at local option
  - -- Responsible parties: NCDOT, other state agencies, professional organizations and the N.C. Institute of Government.
- Monitor the impact of new planning practices
  - -- Responsible parties: NCDOT, other state agencies, professional organizations and the N.C. Institute of Government.

## **Marketing, public education and analysis**

The following steps and actions are intended to enhance both professional and popular knowledge and understanding of new planning practices and development controls.

Marketing, public education and analysis

-- short-term (1-2 years) tasks:

- Develop a promotion and recognition program that highlights the application of new planning practice
  - -- Responsible parties: NCDOT, other state agencies, the Governor and professional organizations.
- Design and carry out analyses that demonstrate the value and impact of new planning practices: Economic impacts including cost of local infrastructure; quality of life and livability impacts; public opinion; developer and business community opinion
  - -- Responsible parties: NCDOT, other state agencies and professional organizations.
- Design and carry out a program to heighten appreciation of the importance and role of regional planning programs to the long term prosperity and quality of life
  - -- Responsible parties: NCDOT, other state agencies and professional organizations.

Marketing, public education and analysis  
-- mid-term (3-5 years) and long-term (6-10 years) task:

- Continue programs to increase public understanding of and recognition for good planning practices
  - -- Responsible parties: NCDOT, other state agencies and professional organizations.

## 8.3 The funding and finance agenda

Expanded services and improved service quality and reliability are the keys to increasing the relevance of public transportation for current and future residents. Neither of these objectives can be met, however, without substantial increases in public transportation investment at all levels -- federal, state and local. Therefore, an action agenda aimed at all three levels of government is required to assure that adequate financial resources will be available to provide convenient and attractive services for both "captive" and "choice" riders.

### **Federal funding initiatives**

Increased federal capital assistance for public transportation is essential for North Carolina in the future. To capture increased federal support will require more intense and effective advocacy activities on several fronts, including the following steps and actions:

Federal funding initiatives -- short-term (1-2 years) tasks:

- Refine state positions on transportation related actions in Washington: ISTEA program structure (STEP 21); highway and transit funding levels; taking the federal Highway Trust Fund "off budget;" future disposition of the 4.3 cent federal gas tax now used for deficit reduction; highway and transit allocation formulas; creation of a federal high- speed rail funding program; funding support for Amtrak  
-- -- Responsible party: NCDOT.
- Prepare state position/policy statement: Governor's endorsement; inclusion in goals for current term  
-- -- Responsible parties: NCDOT and the Governor.
- Prepare information materials to document benefit/impact of increased transit investment by city/region  
-- -- Responsible party: NCDOT.
- Recruit active, broad- based transit advocacy group/coalition: North Carolina interests/organizations; multi-state regional interests on high-speed rail advocacy  
-- -- Responsible party: NCDOT and N.C. Public Transportation Association.
- Conduct regular meetings with congressional delegation coalition: In Washington; in home districts  
-- -- Responsible parties: state and/or local coalitions.

- Seek commitment/endorsement for state positions from delegation
  - -- Responsible parties: NCDoT and state and/or local coalitions.
- Pursue increased high-speed rail funding through the U.S. Department of Transportation/ Federal Railroad Administration (USDOT/FRA)
  - -- Responsible parties: NCDoT and the Southeast Rail Corridor Coalition.
- Pursue increased commitments for regional rail planning through USDOT/Federal Transit Administration (FTA)
  - -- Responsible parties: NCDoT and state and/or local coalitions.
- Seek commitments to fund innovative technologies on which North Carolina places the highest priority
  - -- Responsible parties: NCDoT and state and/or local coalitions.
- Maintain active, coordinated state presence in Washington during ISTEA reauthorization and annual transportation appropriations process
  - -- Responsible parties: NCDoT and state and/or local coalitions.

Federal funding agenda -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Pursue increased commitments for continued regional rail planning through USDOT/FTA

- -- Responsible parties: NCDoT and state and/or local coalitions.
- Pursue federal commitments for regional rail construction through the Federal Transit Administration and congressional appropriations process
- -- Responsible parties: NCDoT and state and/or local coalitions.
- Pursue federal funding for intrastate and southeast region high-speed rail through USDOT/FRA
- -- Responsible parties: NCDoT and the Southeast Rail Corridor Coalition.
- Prepare and advance clear, compelling positions on subsequent reauthorization and related legislative actions
- -- Responsible parties: NCDoT and state and/or local coalitions.
- Build on success
- -- Responsible party: NCDoT.

### **State funding initiatives**

Increases in state funding for public transportation are perhaps the most important elements of the overall funding strategy for the future. Additional state dollars will be required to attract and match available federal funds as well as to entice the increased local contributions needed to match new state and federal funds. To enact significant funding increases at the state level the following steps and actions should be taken:

State funding initiatives -- short-term (1-



2 years) tasks:

- Perform detailed, formal analysis of the recommended funding options described in Chapter 7
  - -- Responsible parties: NCDOT and the State Budget Office.
- Review options with Governor and General Assembly leadership.
  - -- Responsible parties: NCDOT and the State Budget Office.
- Seek endorsement by the Governor and General Assembly
  - -- Responsible parties: NCDOT, the Governor and the state General Assembly.
- Evaluate mechanisms to bond for high- speed rail and regional rail
  - -- Responsible party: NCDOT.
- Draft legislation to increase state revenues, where needed: Recovery of general fund revenues provided from NCDOT; provisions for new revenue sources, if needed; provisions for expanded local revenue-raising authority (See section on "Local Funding Initiatives"); provisions for bonding major capital projects
  - -- Responsible party: NCDOT.
- Prepare information package on legislative proposals for city and regional impact assessment
  - -- Responsible party: NCDOT.
- Recruit active, broad-based state transit advocacy group/ coalition
  - -- Responsible party: N.C. Public

Transportation Association.

- Conduct General Assembly briefings
  - -- Responsible parties: NCDOT and state coalition.
- Redirect available NCDOT funds to public transportation where needed
  - -- Responsible parties: N.C. Board of Transportation and the N.C. Rail Council.

State funding initiatives -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Assure phased-in funding is continued in out-year budget proposals
  - -- Responsible party: NCDOT.
- Prepare annual reports on funding flow, Transit 2001 progress and multimodal system conditions and performance
  - -- Responsible party: NCDOT.
- Pursue legislative, regulatory and administrative program revisions and refinements, as needed
  - -- Responsible party: NCDOT.

### **Local funding initiatives**

Increases in local support for public transportation also are vital to expand transit availability and use. The fundamental action needed to increase the flow of local funds to transit involves broadening local authority to use new or existing revenue sources for transit related purposes. The steps necessary to expand local funding authority include:

Local funding initiatives -- short-term (1-2 years) tasks:

- Prepare detailed, formal analysis of the potential local funding and financing options described in Chapter 7  
-- -- Responsible party: NCDOT.
- Review of options and analyses: With municipal officials; with General Assembly leadership  
-- -- Responsible party: NCDOT.
- Establish preferred local funding options and seek endorsement by the Governor and General Assembly  
-- -- Responsible parties: NCDOT, N.C. League of Municipalities, the Governor and the state General Assembly.
- Draft legislation authorizing local revenue increases: Authority for new revenue sources; broadened use of existing revenue sources; administrative procedures for local action  
-- -- Responsible party: NCDOT.
- Prepare information package on legislative proposals for city and regional impact assessment  
-- -- Responsible party: NCDOT.
- Conduct General Assembly briefings  
-- -- Responsible parties: NCDOT, state coalition and N.C. League of Municipalities.

Local funding initiatives -- mid-term (3-5 years) and long-term (6-10 years) tasks:

- Conduct periodic review of local revenue and funding flows
  - -- Responsible party: N.C. League of Municipalities.
- Pursue legislative and procedural revisions, as needed
  - -- Responsible party: NCDoT.

## 8.4 Summary

The Transit 2001 agenda is comprehensive. It combines activities intended to:

- Expand the scope of public transportation and increase the travel options available to all North Carolinians;
- Enhance the quality, comfort, convenience and cost-effectiveness of services; and
- Better link patterns of future development with our transportation investments.

In addition, the Transit 2001 action agenda extends far beyond the purview of NCDOT, suggesting that responsibility for establishing a public transportation network capable of meeting the challenges of the next century is a responsibility to be shared by government at all levels, by government and the private sector, and by transportation planners and decision makers in concert with land use planners and the development community.

If all of the participants in this

partnership are conscientious in carrying out their individual and shared roles, North Carolina will be a better place in the century ahead.

**Importantly, strong progress on this action agenda will also differentiate North Carolina from its economic competitors and help ensure continued job growth and prosperity in the new century.**

## Transit 2001 Technical Report

# Epilogue

This report closes one chapter on North Carolina public transportation initiatives and opens another, even more exciting one: the plan is complete...the work must begin! The Transit 2001 Commission has met the challenge enunciated by Governor Hunt to "...play a vital role in our efforts to develop a master plan for public transportation in North Carolina that will strengthen our economy and build a brighter future for our state." Mindful of this call to action, the Commission has developed a report which clearly identifies the challenges, spells out an action agenda and recommends options for funding. The proposals are realistic and achievable, and the environment is right for making it happen today.

Growth and development in North Carolina is leading other southeastern states by a substantial margin. This proposes both a challenge and an opportunity. On one hand, it has the potential for stressing the physical infrastructure, of which transportation systems and facilities are a key part. On the other hand, it means that new

transportation investments can provide travel choices which traditionally have not been widely available, such as improved rural, human service, urban, regional and intercity public transportation options! It also means that the state can better underwrite transportation options which enable improved job, medical facility and educational access for many of its citizens. In other words, transit is about improved choices. It means good business, and it does help strengthen the economy.

There is another way that public transportation can play an important role in our state's transportation infrastructure - by helping to preserve and enhance the high quality of life and style of living which continue to attract individuals and businesses. Indeed, a wider array of transit choices in a community helps to promote and encourage wiser patterns of development and greater choices in housing arrangements.

For the Transit 2001 Commission plan to be successful, we must ensure a reliable and stable source of funding to support transit initiatives, and we must increase our investments in public transportation solutions. We must partner with local officials, highway interests, and private businesses and industry in our decisions about transportation investments. And we must ensure there is sufficient local authority to raise revenues for the recommended



investments in transit facilities and services. These Transit 2001 initiatives will establish North Carolina's place as a leader in providing transportation choices for all its citizens.

## Increased Travel Demand in North Carolina

	1985	1994	change
population (millions)	6.2	7.1	+14.5%
vehicle registration (millions)	4.4	5.3	+20.4%
vehicle- miles of travel (billions)	49.9	71.9	+44.1%

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## Transit Intensity in Selected Areas

city	service hours per capita
<b>Chapel Hill</b>	<b>1.49</b>
Portland, Ore.	1.36
Milwaukee	1.28
San Antonio	1.17
Minneapolis- St. Paul	1.00
Austin, Texas	0.92
Salt Lake City	0.80
Rochester, N.Y.	0.80
Richmond, Va.	0.79
Columbus, Ohio	0.72
<b>Durham</b>	<b>0.67</b>
<b>Charlotte</b>	<b>0.66</b>
<b>Winston- Salem</b>	<b>0.52</b>
<b>Greensboro</b>	<b>0.39</b>
<b>N.C. urban average</b>	<b>0.39</b>
<b>Raleigh</b>	<b>0.34</b>
<b>Asheville</b>	<b>0.33</b>
<b>Wilmington</b>	<b>0.27</b>
<b>Fayetteville</b>	<b>0.18</b>

## Transit Funding in Selected States

state	state contributions per capita
Pennsylvania	\$51.40
Wisconsin	13.80
Virginia	13.50
Michigan	12.60
Minnesota	8.10
Florida	6.00
Ohio	2.90
<b>North Carolina</b>	<b>2.90</b>
Tennessee	2.30
Texas	1.10

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# Past Planning Traditions and New Planning Perspectives

**• The transportation problem**

<b>Past planning tradition:</b>	<b>New planning perspective:</b>
Insufficient roadway capacity for cars and trucks.	Declining mobility for people and goods; limited access to key destinations.

**• The transportation solution**

<b>Past planning tradition:</b>	<b>New planning perspective:</b>
Build and upgrade more roads	Provide multimodal facilities and services, expand travel options and choices that are sustained over time, including highways, transit, bicycling and walking. Endorse policies to protect capacity, enhance

efficiency, integrate services and apply new technology.

- **The transportation plan**

<b>Past planning</b>	<b>New planning</b>
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<b>tradition:</b>	<b>perspective:</b>
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A map of where streets and highways will be located	A program and schedule describing actions to increase the supply of transportation services and options, as well as actions to manage travel demand. Broadly framed rationales for why recommended actions are necessary, how they should be interrelated, and how to measure progress and performance in their use.
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- **Transportation budget and finance**

<b>Past planning</b>	<b>New planning</b>
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<b>tradition:</b>	<b>perspective:</b>
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Separate sources of funds for each individual transportation mode or type of expenditure, focused on	Broad flexibility in the use of available funding sources for a variety of transportation improvements and types of expenditures, facilities focused on balancing system preservation, system
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expanding  
highway  
capacity.

management and  
system expansion.

### • Transit

**Past planning**

**tradition:**

40-foot buses  
and subway  
systems  
operated by  
public  
agencies.

**New planning**

**perspective:**

All forms of high-  
capacity, shared- ride  
services; including  
large, medium and  
small buses in express  
and local service; high-  
speed rail; heavy, light  
and regional commuter  
rail; HOV (high-  
occupancy- vehicle)  
facilities; carpooling,  
vanpooling and  
ridesharing; employer-  
based commute  
programs; voucher  
programs;  
telecommunications and  
information systems;  
integrated fare systems  
operated through  
partnerships among  
public agencies; private  
providers; and business  
and industry.

### • The land-use plan

**Past planning**

**tradition:**

A

**New planning**

**perspective:**

A series of maps,

multicolored map separating land uses and maintaining similar densities among adjoining uses.	strategies and policies that establish growth boundaries; highlight multi-use activity centers; vary land-use mix and density; link uses; preserve sensitive land areas; and provide incentives to size, locate and link development in accordance with goals and performance criteria.
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## Comparison of North Carolina's Rural and Urban Counties

(source: 1990 Federal Census)

	<b>Rural counties</b>	<b>Urban counties</b>	<b>All counties</b>
<b>Population</b> (and as percentage of total state population)	3,872,469 (58.4%)	2,756,168 (41.6%)	6,628,637 (100%)
<b>Land area</b> (and as percentage of state's total land area)	42,425 sq. mi. (87.1%)	6,293 sq. mi. (12.9%)	48,718 sq. mi. (100%)
<b>Average population density</b>	91 people per sq. mi.	438 people per sq. mi.	136 people per sq. mi.
<b>Minority population</b> (and as percentage of respective rural, urban or total state population)	879,898 (22.7%)	947,944 (34.4%)	1,827,842 (27.6%)
<b>Citizens age 65 or older</b> (and as			

percentage of respective rural, urban or total state population)	466,789 (12.1%)	335,276 (12.2%)	802,065 (12.1%)
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**Households  
without a  
personal vehicle**

(and as percentage of respective rural, urban or total state population)	175,283 (12.6%)	66,428 (5.9%)	241,711 (9.6%)
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**Median  
household  
income**

\$21,475	\$33,039	\$26,647
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**Employment**

(and as percentage of total state employment)	1,647,093 (42.3%)	2,247,109 (57.7%)	3,894,202 (100%)
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**Social Security  
beneficiaries**

(and as percentage of respective rural, urban or total state population)	861,080 (22.2%)	458,915 (16.7%)	1,319,995 (19.9%)
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**People with  
disabilities (and  
as percentage of  
respective rural,  
urban or total  
state population)**

295,940 (7.6%)	156,440 (5.7%)	452,380 (6.8%)
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**People living  
below U.S.  
poverty level**

(and as percentage of respective rural, urban or total state population)	657,133 (17.0%)	342,916 (12.4%)	1,000,049 (15.1%)
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## North Carolina's Human Service Transportation Systems

**Human service transportation systems operate  
in these 56 North Carolina counties:**

<u>Alexander</u>	<u>Cleveland</u>	<u>Hyde</u>	<u>Richmond</u>
<u>Alleghany</u>	<u>Columbus</u>	<u>Iredell</u>	<u>Robeson</u>
<u>Ashe</u>	<u>Cumberland</u>	<u>Johnston</u>	<u>Rockingham</u>
<u>Beaufort</u>	<u>Dare</u>	<u>Lenoir</u>	<u>Rowan</u>
<u>Brunswick</u>	<u>Duplin</u>	<u>Lincoln</u>	<u>Rutherford</u>
<u>Burke</u>	<u>Durham</u>	<u>McDowell</u>	<u>Sampson</u>
<u>Cabarrus</u>	<u>Edgecombe</u>	<u>Macon</u>	<u>Scotland</u>
<u>Caldwell</u>	<u>Forsyth</u>	<u>Martin</u>	<u>Swain</u>
<u>Carteret</u>	<u>Gaston</u>	<u>Montgomery</u>	<u>Tyrrell</u>
<u>Caswell</u>	<u>Gates</u>	<u>Nash</u>	<u>Union</u>
<u>Catawba</u>	<u>Graham</u>	<u>Onslow</u>	<u>Wake</u>
<u>Chatham</u>	<u>Greene</u>	<u>Pender</u>	<u>Washington</u>
<u>Cherokee</u>	<u>Harnett</u>	<u>Pitt</u>	<u>Wayne</u>
<u>Clay</u>	<u>Hoke</u>	<u>Randolph</u>	<u>Wilson</u>

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## North Carolina's Rural General Public Transportation Systems

**Rural general public transportation systems  
operate in these 44 North Carolina counties:**

<u>Alamance</u>	<u>Davie</u>	<u>Madison</u>	<u>Polk</u>
<u>Anson</u>	<u>Franklin</u>	<u>Mecklenburg</u>	<u>Stanly</u>
<u>Avery</u>	<u>Granville</u>	<u>Mitchell</u>	<u>Stokes</u>
<u>Bertie</u>	<u>Guilford</u>	<u>Moore</u>	<u>Surry</u>
<u>Bladen</u>	<u>Halifax</u>	<u>New</u>	<u>Transylvania</u>
<u>Buncombe</u>	<u>Haywood</u>	<u>Hanover</u>	<u>Vance</u>
<u>Camden</u>	<u>Henderson</u>	<u>Northampton</u>	<u>Warren</u>
<u>Chowan</u>	<u>Hertford</u>	<u>Orange</u>	<u>Watauga</u>
<u>Craven</u>	<u>Jackson</u>	<u>Pamlico</u>	<u>Wilkes</u>
<u>Currituck</u>	<u>Jones</u>	<u>Pasquotank</u>	<u>Yadkin</u>
<u>Davidson</u>	<u>Lee</u>	<u>Perquimans</u>	<u>Yancey</u>
		<u>Person</u>	

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## **Intercity Bus Operations in North Carolina** (state Fiscal Year 1994-95)

<b>Total bus-miles operated</b>	
Greyhound	4,215,683
Trailways	5,132,109
Total	9,347,792
<b>Number of passengers</b>	
Greyhound	117,834
Trailways	171,062
Total	288,896
<b>Total passenger revenues</b>	
Greyhound	\$1,053,024
Trailways	\$2,133,144
Total	\$3,186,168
<b>Average revenue per ticket</b>	
Greyhound	\$8.94
Trailways	\$12.74
Total	\$11.03

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## **Ridership on State- Assisted Intercity Bus Routes**

(state Fiscal Year 1995-96)

<b>Route</b>	<b>Annual passengers</b>
Raleigh to Washington, N.C.	13,856
Wilmington to Washington, N.C.	19,925
Raleigh to Morehead City, N.C.	20,713

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## North Carolina's Urban and Regional Transportation Systems

**Urban transit systems operate in these 17  
North Carolina cities:**

<u>Asheville</u>	<u>Fayetteville</u>	<u>Hickory</u>	<u>Salisbury</u>
<u>Boone</u>	<u>Gastonia</u>	<u>High</u>	<u>Wilmington</u>
<u>Chapel</u>	<u>Greensboro</u>	<u>Point</u>	<u>Wilson</u>
<u>Hill</u>	<u>Greenville</u>	<u>Raleigh</u>	<u>Winston-</u>
<u>Charlotte</u>		<u>Rocky</u>	<u>Salem</u>
<u>Durham</u>		<u>Mount</u>	

**Regional transit** operates in the Research Triangle metropolitan region to connect Raleigh, Durham, Cary and Chapel Hill with nearby suburbs, Research Triangle Park and Raleigh-Durham International Airport.

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## Ridesharing Activities in North Carolina

	vans in fleet	vanpools (June 1995)	average daily riders	annual passenger trips	average round- trip (miles)	vehicle- miles saved per year	carpool match requests
<b>Metropool,</b> Metro Charlotte	26	21	274	138,100	61	3,900,000	243
<b>Rideshare Services and Vanpooling of the Piedmont (RSVP)</b> Piedmont Triad Metro Region	72	60	1,015	511,600	75	19,200,000	635
<b>Tri-A-Ride</b> Research Triangle Metro Region	55	30	409	177,500	68	5,500,000	3,600
<b>Total</b>	153	111	1,698	827,200	68	28,600,000	4,478

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## **Carolinian Passenger Train Operations**

(state FY1995-96)

<b>Total passengers</b>	168,232
<b>Revenue</b>	\$2,833,113
<b>Revenue per passenger</b>	\$16.84
<b>State contributions</b>	\$894,089
<b>Recovery ratio</b>	82%

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# Investment Allocations for Public Transportation in North Carolina

(state FY1995-96)

recipient	ridership (millions)	federal (millions)	state (millions)	local/fares (millions)	total (millions)
<b>Rural and human service transportation</b>	6.0	\$3.7(c)	\$5.8	\$15.0	\$24.5
<b>Urban and regional transit</b>	32.6	\$20.3	\$7.4	\$42.0(b)	\$69.7
<b>Intercity rail passenger services</b>	0.2	\$0	\$3.9	\$2.3	\$6.2
<b>Other activities(a)</b>	n/a	\$4.4	\$2.8	\$0.8	\$8.0
<b>Total investments</b>	38.8	\$28.4	\$19.9	\$60.1	\$108.4

## Notes

(a) Includes federal, state and local funds for planning, local and state program administration, demonstration projects, research and training; allocated to urban, regional, rural and human service transportation systems.

(b) Includes approximately \$14 million in fare receipts.

(c) Includes \$96,000 in federal funding that the state allocates for intercity bus services.

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## Sources and Uses of Transit Investments in North Carolina

(state FY1995-96)

recipient	federal (millions)	state (millions)	local/fares (millions)	total (millions)
<b>Capital improvements</b>	\$14.5	\$3.5	\$2.1	\$20.1
<b>Operations</b>	\$9.5	\$13.6(c)	\$57.2	\$80.3
<b>Other expenses(a)</b>	\$4.4	\$2.9	\$0.8	\$8.0
<b>Total expenditures (b)</b>	\$28.4	\$19.9	\$60.1	\$108.4

### Notes

(a) Includes planning, local and state program administration, demonstration projects, research and training.

(b) Grand total includes formula appropriations, discretionary funds and funds reprogrammed from prior years.

(c) Includes \$3.9 million in state passenger- rail funding primarily used for administration, capital and operations.

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## North Carolina State Transit Funding: Program Structure and Characteristics

source	programs	amounts to transit (millions)	eligible uses and allocations
<b>At least 50 cents multiplied by the</b>	Elderly and Disabled Transportation Assistance Program (EDTAP)	\$3.7	Formula allocation to 100 counties with county suballocation - - operating assistance only.
	Urban Maintenance Assistance	\$6.1	Formula allocation to fixed- route transit systems -- operating assistance only; state amount cannot exceed local contribution.

<b>total number of registered vehicles in the state is allocated to transit from the state Highway Fund  and  Balance from state Highway Trust</b>	Rural General Public Transportation	\$0.6	Formunla allocation to rural agencies serving general public (FTA Section 18 recipients) - - operating assistance only. Discretionary project grants to FTA Section 16 transit systems -- administrative support only. Discretionary project grants to FTA Section 16 and Section 18 transit systems -- capital only.
	Human Service Transportation Management	\$0.4	
	Human Service Capital Program	\$1.0	
	Match	\$4.9	Discretionary project grants to match FTA Section 3, Section 8, Section 9, Section 16, Section 26 and Section 18 for capital, planning and

<b>Fund</b>			administration.
			For operations,
<b>Balance</b>			capital,
<b>from state</b>	Rail		inventory,
<b>Highway</b>	Passenger	\$3.9	purchases and
<b>Trust</b>	Program		administration;
<b>Fund</b>			amounts
			budgeted
			annually.

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## **Regional Examples of Flexible Transfers to Public Transportation Under ISTEA, 1992-95**

state	(millions)
Virginia	\$48.9
Maryland	\$15.2
Florida	\$14.6
Georgia	\$11.0
Louisiana	\$9.7
Alabama	\$6.1
Kentucky	\$5.5
Tennessee	\$2.5
<b>North Carolina</b>	<b>\$0</b>
South Carolina	\$0

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## Revenue Sources and Allocations for Transit in Peer States

**California:** Statewide 6 percent retail sales tax, of which one-fourth of the revenues are returned to the region where they were collected to be used for transit

**Florida:** Nine sources, including fuel taxes, license fees, registration fees, title fees and vehicle-rental fees, from which funds are deposited into a Unified Transportation Fund from which a minimum of 14.3 percent is allocated to transit.

**Michigan:** Highway user fees from gasoline taxes and registration fees, from which funds are

deposited into a Statewide Transportation Fund where a minimum of 10 percent is designated for transit.

**Pennsylvania:** Statewide lottery proceeds and other sources which reimburse transit systems for 100 percent of the costs incurred for providing free transit services to elderly citizens.

**Virginia:** Gasoline taxes, motor-vehicle excise taxes, registration fees and tax on tires from which funds are deposited into a Highway Maintenance and Operations Fund, from which transit receives 2 percent of the total; general sales tax of 0.75 percent, from which funds are deposited into a Transportation Trust Fund and 8.4 percent is allocated to transit; and a deed- recording fee for all statewide property transactions, a portion of which is used to pay local bond issues that fund transit projects.

**Washington:** Statewide motor-vehicle excise tax of .725 percent, of which one-fourth of the revenues are returned to the region where they were collected to be used for transit.

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## State Funding Contributions to Transit by Peer States (state FY1995-96)

state	1997 estimated population (millions)	state funding for transit (millions)	per- capita state funding
Pennsylvania	12.1	\$617.6	\$51.4
Michigan	9.4	\$118.4	\$12.6
Virginia	6.4	\$86.4	\$13.5
Florida	13.5	\$81.2	\$6.0
Wisconsin	5.0	\$69.3	\$13.8
Minnesota	4.5	\$36.6	\$8.1
Ohio	11.0	\$32.4	\$2.9
<b>North Carolina</b>	<b>6.8</b>	<b>\$19.9</b>	<b>\$2.9</b>
Texas	17.7	\$19.3	\$1.1
Tennessee	5.0	\$11.5	\$2.3

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